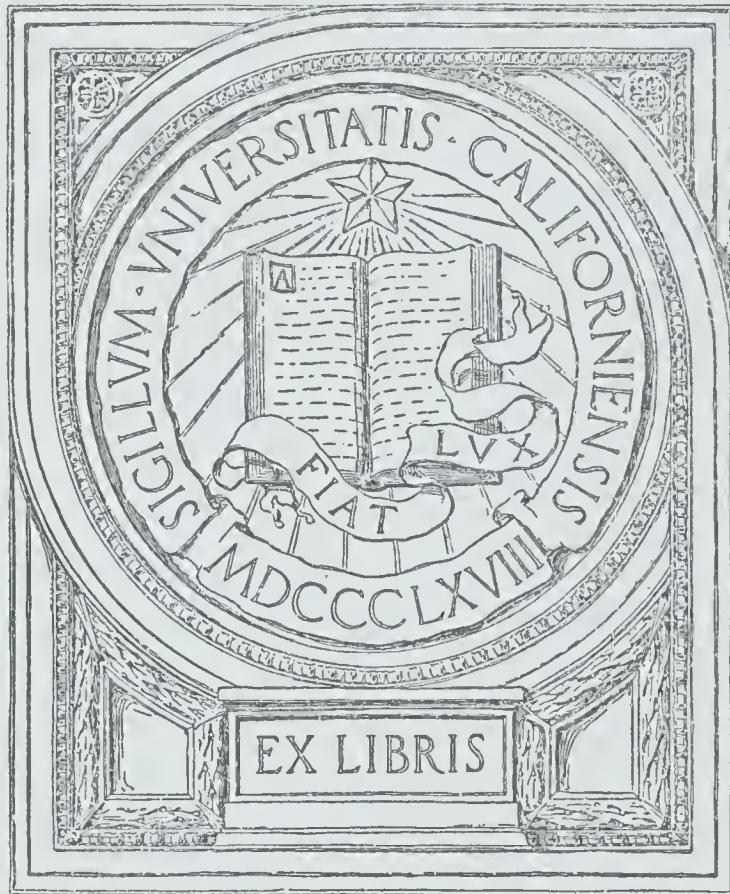
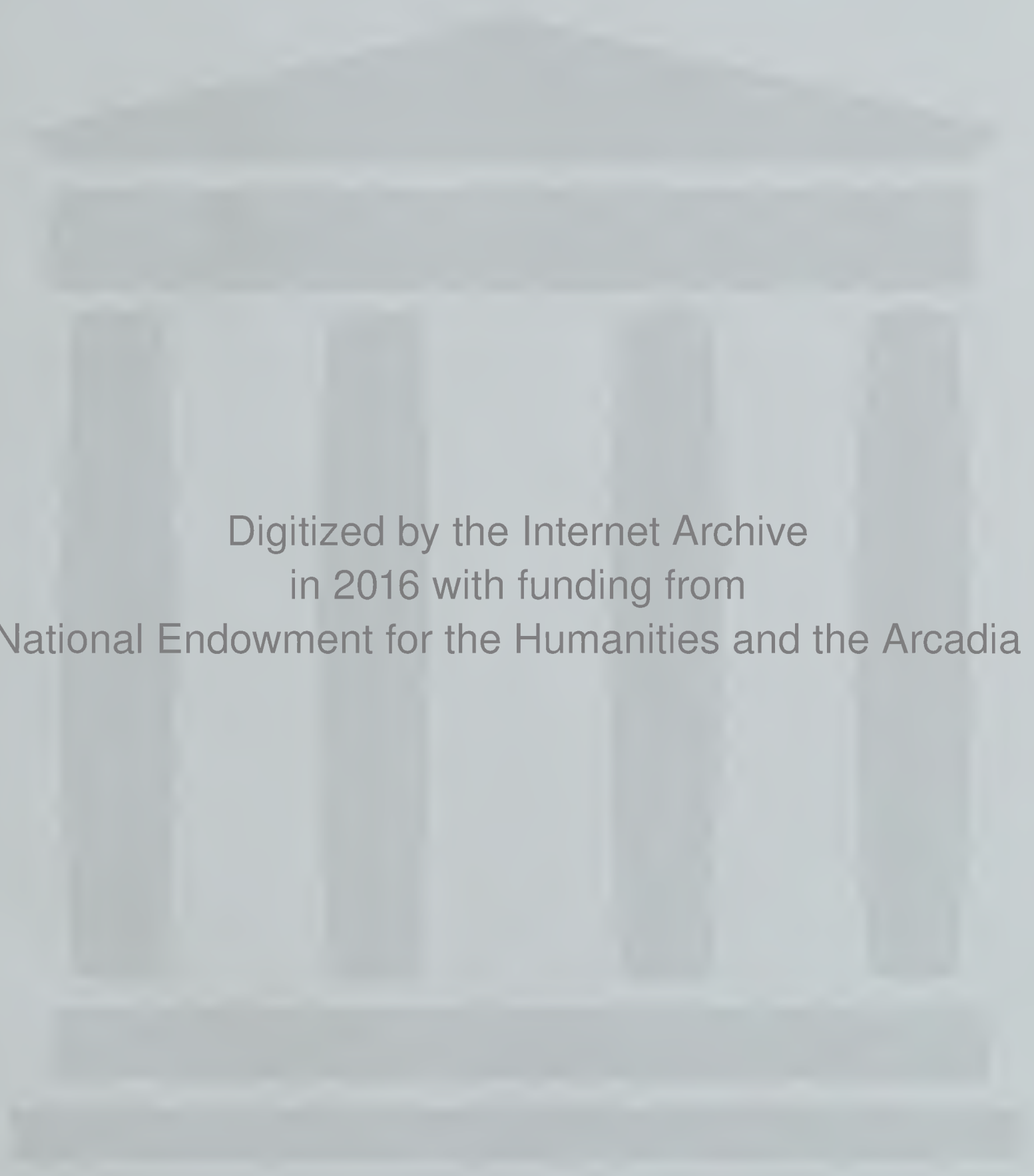


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THE TREATMENT OF SEVERE ASTHMA*

By

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Montgomery, Ala.

When a physician is called to treat a case of asthma, he must first prove that what he is treating is actually asthma since there are many conditions that may cause dyspnea. Since "all is not asthma that wheezes," the physician must be continually on his guard, especially when treating individuals past middle age. In these he may find that the wheezing and dyspnea are due to cardiac decompensation, or to an aortic aneurysm, or to an intrabronchial growth. Likewise, he must keep in mind that a tuberculous lymph node pressing upon the trachea, or an enlarged thyroid, or, in infants and children, an enlarged thymus gland pressing upon the trachea may give rise to symptoms resembling asthma.

Having decided to his satisfaction that it is bronchial asthma with which he is concerned, he must next determine whether it is of allergic or infectious origin, and whether it is of mild or severe type. If of allergic origin the physician will note that the patient is free of fever. His pulse and respiratory rates will be increased. The sputum that he brings up will be thin, white and frothy, and on microscopic examination eosinophiles will be present. The blood will show a normal total white cell count with many eosinophiles.

In the infectious type of asthma the patient has usually had a previous respiratory infection, followed by coughing with the production of a sputum purulent in nature. On direct smear it is found to contain

many bacteria—streptococci, pneumococci or staphylococci, alone or in combination—and a predominance of polymorphonuclear cells with a marked decrease, or absence even, of eosinophiles. The total white count is elevated, and there is likewise a decrease or absence of eosinophiles with a predominance of polymorphonuclear cells in the differential count. In addition, the patient has a varying degree of fever with a proportionate rise in the pulse and respiratory rates; and finally there is a rise in the sedimentation rate.

Having decided the type of asthma the physician is dealing with, the treatment is directed against three factors: first, the attack; second, the complications and coexisting conditions that may be present; and, finally, the cause. The latter is dealt with only after the acuteness of the situation is over.

In treating the actual attack, if mild, a capsule containing ephedrine and some barbiturate derivative given orally every four hours will, as a rule, end the attack; or one may use a capsule containing propadrine hydrochloride, grain $\frac{3}{4}$, every four to six hours, which gives as good results as the former, and in some cases obviates the urinary retention and nervousness occasioned by the former. Recently, tablets containing theophylline grains $2\frac{1}{2}$, ephedrine grain $\frac{3}{8}$ and phenobarbital grain $\frac{1}{4}$ have been placed at the disposal of the profession, and when administered orally, at four to six-hour intervals, give excellent results. Their one objection is that they cause some individuals to become nervous and upset. We have overcome this objectionable feature by compounding these drugs in varying proportions, and even using propadrine hydrochloride instead of ephedrine where indicated. In our hands this procedure has been very gratifying. Rarely is a dose of epine-

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phrine (1:1000) needed to end an attack of mild nature.

If the attack of asthma is severe the problem becomes somewhat more acute, and tests the resourcefulness of the physician. If he fails to give relief the patient may go into a state of status asthmaticus, which is one of the gravest emergencies in medicine. In this type of case epinephrine (1:1000) is given in doses of 0.5 cc. hypodermically, and may be repeated at twenty to thirty-minute intervals if necessary. If the patient has not received any appreciable relief after six to eight doses of epinephrine the physician must face the fact that he is dealing with a case of status asthmaticus. Aminophyllin, grains $7\frac{1}{2}$, is then given intravenously at four to six-hour intervals. The contents of a 2 cc. ampoule, containing $7\frac{1}{2}$ grains, is added to 8 cc. of sterile water. This is then injected into the vein at a rate not to exceed 1 cc. per minute. If the rate is faster than this the patient will complain of symptoms resulting from the peripheral vasodilatation the drug occasions. Since this type of case is an emergency, the patient should be hospitalized, all inhalent allergens removed, dust and smoke avoided, the diet restricted to those foods to which the patient is not sensitive, and sedation, by bromides or barbiturates, prescribed. Under such a regimen the patient should be well over his attack before three to four days have passed.

In treating a case of infectious asthma, severe in nature, the physician is dealing with an actual emergency and all his faculties must be ever alert if he is to bring the patient out of the attack. The treatment of this dreaded condition has changed so drastically in the past two years that it would be impossible, in the time allotted this paper, to discuss all the phases of therapy available. However, since the advent of the sulfonamide drugs, this condition has lost a goodly portion of the dread that formerly accompanied it. In May 1940 Dr. C. K. Weil and I published in this Journal a resume' of the treatment, by sulfonamide drugs, of a series of seven cases of status asthmaticus of infectious origin. We showed that if the findings justified the diagnosis of the infectious type of asthma the use of the proper sulfonamide derivative gave prompt relief. If the streptococcus, on direct smear and culture, was the predominant organism in the

sputum, sulfanilamide should be used. The dosage recommended was as follows: grains 20 every six hours for two days, then grains 15 every six hours for three days, and finally grains 10 every six hours for four days. If the pneumococcus was predominant, one could use either sulfapyridine or sulfathiazole in doses of 15 grains every four hours until 40-50 tablets were utilized. If the staphylococcus organism was in predominance, sulfathiazole in the above dosage ended the attack within 24 to 72 hours. Whereas, during the attack, the patient showed fever, leucocytosis, increased sedimentation rate and, most important, a purulent sputum, after the acute attack had been relieved the patient's laboratory findings became those of the allergic type or normal.

Though these patients present varying degrees of frightening cyanosis, we have come, almost, to disregard this symptom since, after 24-hour use of the sulfonamide drug, the cyanosis caused by the patient's asthma has been greatly relieved. That caused by the drug will disappear after several days cessation of the drug. Since the patient is quite taken up with the business of breathing, almost to the exclusion of everything else, he may become dehydrated and hypoglycemic if much epinephrine has been used. These factors must be treated by use of saline subcutaneously for the former and glucose by vein for the latter. For tenacious sputum that the patient may have difficulty in raising, iodides give good results. These patients are restless, anxious and emotionally upset as a result of the severity of their attack. Next to treating the infection, sedation is the second important factor to consider. The nervous symptoms may be controlled with bromides or barbiturates in the average case. In some cases dilaudid hydrochloride, grain $\frac{1}{32}$ to $\frac{1}{20}$ hypodermically, may be necessary for relief. Morphine must never be used under any circumstances, despite the extreme severity of the case. With the number of narcotic drugs available for use, it becomes almost criminal to use morphine which has been responsible for many deaths.

When the patient has completely recovered from his attack, the physician's next duty is to discover the cause, for the best results in the treatment of asthma come from preventive measures. After a thorough history has been taken and a complete physical ex-

amination and necessary laboratory work have been done, the patient should be skin tested, by scratch first and intradermal method later, for those antigens which the history points to as possible factors. Avoidance of the offending antigens should always be practiced. When impractical, for whatever reason, specific desensitization gives excellent results if correctly administered. It must be remembered, also, that with the allergic constitution these individuals possess those antigens to which they may in the future be sensitive must likewise be religiously avoided. For example, despite the fact that the patient may not be sensitive to feathers at the time he is tested, he should be advised against sleeping upon a feather pillow or tick as he may in the future develop a sensitivity to this antigen. The physician may wonder why the patient has suddenly developed an attack of asthma on the very same treatment that previously kept him asthma-free. Preventive measures as these may mean the difference between success and failure in treating a case of asthma. In addition to the above, the patient may be given various medicines to take should he develop attacks of slight wheezing any time of the day or night. Finally, he should be warned against getting chilled, catching cold, entering dusty or smoky environments, contacting any offending antigens to which he is sensitive, emotional upsets, exhausting labor and any other factors which may precipitate an attack of asthma.

Finally, a word about the patient himself: In view of the chronicity of the asthmatic condition and the severity of the presenting symptoms, the attending physician is apt to concentrate solely upon the treatment of the condition, forgetting all the while that it is the patient with the asthma that he is treating. The patient, as a result of the frequent attacks of wheezing and dyspnea and this type of therapeutic endeavor, where he is forgotten in the urgency to relieve the symptoms, develops a feeling of depression, and hopelessness even, from which it may be very difficult to remove him. We do not infer that the physician should "soft soap" his patient, or feed him empty platitudes in order to keep his courage up. We do feel, however, that in order to obtain optimum results, the patient, as in diabetes, should know something about his condition. Only with

the intelligent cooperation of the patient, which must be predicated by a basic knowledge of asthma, and allergy in general, will the physician truly succeed in accomplishing his purpose. With this type of therapy that coordinates and synchronizes the patient and his disease, the physician will not only bring his patient out of his attack of asthma rapidly but, more important, will instill into him a feeling of hopefulness and courage to go on and fight off attacks that may come in the future. The patient therefore will face the future, not with fear and hopelessness, but with a feeling of quiet courage, and assurance in the knowledge that he is not alone in the fight against any attack of asthma which he may develop.

CONCLUSIONS

1. When a physician is called to treat a case of wheezing and dyspnea he must eliminate several other conditions which may give rise to symptoms resembling asthma, especially in individuals past middle age.
2. After having proven his diagnosis, he must determine whether it is allergic or infectious asthma with which he is dealing.
3. The allergic and infectious types of asthma, mild and severe, have been discussed, both as to criteria for diagnosis and medication to be used. In the infectious type the sulfonamide derivatives have reduced, to a great extent, the dread and fear which previously accompanied this condition.
4. After the acute stage of the attack is past, the offending antigens must be determined by means of a thorough history, complete physical examination and laboratory work, and by scratch and intradermal methods of skin testing.
5. The specific antigen when found must be avoided and specific desensitization used if necessary.
6. An understanding of his disease, on the part of the patient, and an attitude of cheerfulness and hope on the part of the physician go far toward preventing the despondency which accompanies all chronic or recurrent diseases.

"The diet of the healthy individual should be well rounded with thoughtful planning of meals to include foods rich in vitamins. The diet of the postoperative patient should be supplemented with those vitamins which will aid recovery."

THE MANAGEMENT OF THE ALLERGIC CASE*

By

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It is the object of this paper to present a method of management of the allergic individual. After a few general remarks I propose to present five clinical cases, four of which have been under observation for more than a year. By the presentation of these cases it is hoped to indicate this manner of management and a few of the problems of the allergic case.

It is often assumed that the diagnosis of an allergic condition is easily made. This is generally true. However, when it is remembered that any obstruction to the air passages will cause wheezing, the differential diagnosis of bronchial asthma may become a medical problem involving the consideration of many conditions. If the word asthma is used as a descriptive term for wheezing, these conditions are asthmatic but they may not represent allergic asthma. As with asthma the differential diagnosis of other allergic conditions requires not only a knowledge of internal medicine but a general knowledge of several specialties. In many cases consultation is frequently desirable and should be obtained.

Only by a careful history, physical examination, and certain laboratory procedures can accurate diagnoses be made. Laboratory examinations are frequently helpful in confirming a diagnosis of a true allergic condition and in ruling out associated or complicating pathology.

Good medical judgment should guide the application of the findings of the allergic investigation to the individual. Care must be taken not to aggravate or leave untreated coincident conditions of disease or deficiency. If essential foods are withdrawn from the diet satisfactory substitutes must be provided. Especially is this true in respect to the growing child or the undernourished adult.

Full and complete cooperation of the patient is essential to successful management.

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It is my experience that cooperation is best obtained by a frank discussion of the allergic problem. This fact should be thoroughly discussed and understood: The predisposition to the allergic state is in most cases an inherited characteristic. This underlying predisposition cannot with our present knowledge be altered. An allergic condition can not in the true sense of the word be cured. Rather it can in a large percentage of cases be adequately controlled.

In general, skin tests should be done routinely for all of the common foods eaten, the common inhalants, the pollens commonly known to cause trouble in any particular area, and to extracts of molds and yeasts available. The part played by molds and yeasts in allergy has as yet been but incompletely investigated.

One should not always accept the results of skin testing with food extracts too literally. Skin reactions that are borderline or questionable should be considered as questionable until proved otherwise.

A positive skin test to a pollen extract associated with increased clinical symptoms at a time of year when the pollen is known to be present in the air is usually significant. Likewise, positive reactions to inhalants are usually important. Whenever possible complete avoidance of positive reacting inhalants or pollens is highly desirable. When this is impossible desensitization should be attempted.

The first case I wish to present is that of a white male, aged 19, first seen by me in October of 1938. According to his history he had suffered from attacks of asthma intermittently since the age of eight. For the two years immediately past he had had little or no trouble. Two weeks before, an attack diagnosed as bronchial asthma followed an acute upper respiratory infection. Sneezing and a watery nasal discharge frequently occurred.

Examination of the chest revealed widely scattered moist, musical inspiratory and expiratory rales and a marked inspiratory and prolonged expiratory wheeze characteristic of bronchial asthma. Otherwise the physical examination was within normal limits.

X-ray of the chest failed to reveal any significant pathology. A basal metabolic rate determination was within normal limits.

Strongly positive skin tests were obtained to extracts of house dust, cotton mattress dust, feathers and several foods. The foods were eliminated from the diet, all contact with feathers was avoided, and steps were taken to make his bedroom as free of dust as possible.

Desensitization was begun with 0.1 cc. of a mixture of equal parts of cotton mattress extract 1:100,000 and house dust extract 1:1,000,000. Meanwhile symptomatic treatment for temporary relief had been begun. Relief was prompt and the maximum dose that failed to give a local reaction was reached in June 1939. This dose was 0.1 cc. of a mixture of the full strength cotton mattress extract and the full strength house dust extract. This amount was given at 3 to 4 week intervals and served to keep the patient symptom free except for occasional attacks of sneezing.

One year later the same dose was being continued at 3 to 4 week intervals. At this time on one occasion the patient failed to appear for treatment until seven weeks had passed. He was given his usual dose. Within ten minutes there occurred a marked generalized urticaria and a severe asthmatic attack. Swelling and redness were marked at the site of the hypodermic injection. Epinephrin was necessary for relief.

Subsequent doses were reduced to a dilution of 1:1000 with no reaction, and the process of gradual increase begun again.

This case illustrates several points of interest.

1. This patient had enjoyed a spontaneous remission of two years duration previous to consulting me. An acute upper respiratory infection apparently initiated a loss in tolerance to certain allergens, thus precipitating bronchial asthma. While under treatment several other episodes of acute upper respiratory infections were not complicated with asthma.

Remissions occurring spontaneously make evaluation of treatment uncertain.

2. Tolerance built up through the process of desensitization is lost rapidly when the process is terminated.

These two points: The possibility of remission and the rapid loss of tolerance serve to confuse the question frequently asked as to how long treatment should be continued.

The second case I desire to present is that of a girl 14 years of age, under observation for five months. The history is as follows: Asthma had been present four years since the age of ten. There had been no seasonal variation. In the past pneumonia had occurred four times, and previous to the onset of asthma frequent attacks of bronchitis occurred. In general the attacks had been noticed most often after going to bed and after eating. Much schooling had been missed with the result that the child lacked a year and a half of completing grade school.

One brother is asthmatic and her grandfather was an asthmatic.

Physical examination revealed a young female child 4'-11½" in height, weighing only 73 pounds, somewhat short of breath. The secondary sex characteristics were undeveloped. The nasal mucous membrane was boggy and had a pale bluish appearance. Examination of the chest revealed many moist musical inspiratory and expiratory rales and a prolonged expiratory wheeze characteristic of bronchial asthma.

Laboratory findings: The urine was normal. The blood count was essentially normal except for an 8% eosinophilia. A basal metabolic rate determination was minus 21. The Mantoux test was read as 3 plus. An x-ray of the chest revealed multiple calcified nodes in the hilum and mediastinum and increased markings in the upper lobes of the lungs.

A diagnosis of bronchial asthma, allergic rhinitis, moderate hypothyroidism, and malnutrition was made.

Skin tests gave marked reactions to extracts of house dust, mackerel, and lamb.

In view of the frequent severe asthmatic attacks, the marked malnutrition and the x-ray findings, it was felt advisable to have this child remain out of school. Her room was made as dust free as possible, feather pillows were removed, ½ grain of thyroid extract daily was prescribed, and a high caloric diet begun, avoiding lamb and fish.

An injection of 0.2 cc. of a 1:1,000,000 dilution of an extract made from her own house dust was given. A slight local reaction consisting of soreness and slight redness was noted. The dose was reduced to 0.5 cc. of a 1:10,000,000 dilution. A few days later the weight had dropped to 71½ pounds. Thyroid extract was stopped. Increasing doses of

house dust extract were continued twice weekly. By November attacks of asthma had become infrequent and were mild when they did occur. Thyroid extract therapy had been resumed the month previously. The weight was 86½ pounds, a gain of 15 pounds. The maximum dose of house dust extract had been determined as 0.1 cc. of a 1:10 dilution. Injections were continued every 3 to 4 weeks.

In December an attack of acute appendicitis necessitating operation occurred. During the two weeks stay in the hospital no asthma occurred. There was a loss of weight to 81 pounds as a result of the operation.

This case illustrates the morbidity attendant upon severe asthma. This child, inhibited in growth and losing the opportunity of schooling, has little chance in the world unless relief is obtained. Continuous paroxysms of asthma must eventually result in emphysema and secondary infection.

The prognosis of this case is good only so long as strict allergic management is maintained. There is of course the possibility that so-called intrinsic asthma may ensue. Without strict management such a possibility in my opinion is likely.

The third case is that of a girl 16 years of age seen in May 1939. The history of this case is as follows: For slightly over a year there had been present intermittently attacks of sneezing and a watery nasal discharge. No correlation of the attacks with exposure to inhalants or food could be made. Four months previously, in February 1939, the first attack of bronchial asthma occurred.

No family history of allergy could be obtained. The child was adopted in infancy from the Salvation Army Home and the parents were unknown. The family into which she was adopted is intelligent and kindly. In an effort to compensate for the lack of a real mother and father everything possible was done to make the child happy. As a result she became a spoiled child, subject to violent temper tantrums. It was not unusual for her to scream, lie on the floor, tear her hair, or bump her head against the wall. Not infrequently asthmatic attacks would begin during or follow such tantrums. Her mother stated that it was often true that as long as the child was allowed her way asthmatic attacks were infrequent.

Since the onset in February the attacks of asthma had become more frequent and severe. Partial relief could be obtained by symptomatic treatment.

Physical examination revealed a normally developed girl sixteen years of age. No abnormal findings other than the marked inspiratory and expiratory wheeze, the prolongation of expiration, and the widely scattered coarse musical rales characteristic of bronchial asthma were observed. An examination by a specialist gave no evidence of paranasal sinus infection.

Laboratory findings: The examination of the blood and urine was normal. A basal metabolic rate determination was minus 10. An analysis of the gastric contents was normal.

Skin tests gave no clear-cut positive reactions. Questionable reactions were obtained from several pollens, foods and house dust.

A leucopenic index was determined to wheat, egg, orange and milk. A drop in the white blood count of 2000 or more was noted after the ingestion of milk, wheat and orange.

Symptomatic treatment served to give partial or temporary relief from attacks. Meanwhile desensitization to house dust and the several pollens was begun. The bedroom was made as dust free as possible. Pillows were covered with allergic proof cases. Only hypo-allergic cosmetics were used. Questionable foods were eliminated for a trial period. Later the Rowe elimination diets were employed.

No relief was obtained and a trip to Florida was suggested. The change in environment was of no apparent benefit. After five months had passed epinephrin hypodermically was employed frequently. Toran-til or histaminase and potassium gluconate given in large doses seemed of no assistance. Thyroid extract one grain each day was well tolerated but gave no relief. Stock upper respiratory vaccines were of no apparent benefit.

In the ensuing year contact was lost with the patient except on occasions when epinephrin hypodermically failed to give relief. On these occasions 50% glucose with 2 minims of epinephrin hydrochloride 1:1000 intravenously usually gave relief. On other occasions .48 gm. aminophyllin with 2 min-

ims of epinephrin 1:1000 were used with the same result.

In December 1940 I saw her with a most severe attack. The usual method of treatment failed to give relief. Epinephrin in oil seemed to be of but little assistance. The temperature was 99 degrees. Hospitalization was advised.

The temperature rose to 102 degrees. The white blood count was 20,000 with a high percentage of polymorphonuclear leucocytes. The sputum was purulent.

Physical examination revealed no evidence of any localization of chest pathology. The lungs were resonant. There was a marked inspiratory and expiratory wheezing, there were generalized moist musical rales, and expiration was prolonged in respect to inspiration.

Sputum was sent to the laboratory for culture and the preparation of an autogenous vaccine. Sulfanilamide was begun in large doses. Within 24 hours the asthmatic attack subsided and the temperature and blood counts rapidly returned to normal. Several comfortable days were spent in the hospital. Soon after returning home the administration of an autogenous vaccine made from a streptococcus alpha was begun. A test dose intradermally gave no more local reaction in 24 hours than a similar amount of stock catarrhalis combined vaccine. Nevertheless, injections were begun at five-day intervals. No local or general reaction was evident.

Meanwhile attacks of bronchial asthma recurred and soon approached in severity the attack already described. Once again sulfanilamide was effective in partially relieving the attack.

Following my departure to the Army Medical Corps, I was advised by a written communication that another apparently uncontrollable attack ensued.

In discussing this case there are several points of interest. Clinically it was thought to be a true allergic asthma when first seen. The attacks came on suddenly, often at night, were frequently preceded by sneezing, and on several occasions an eosinophilia was noted. However, all skin tests were negative or questionable. These tests were repeated in part several months later with still negative results. The so-called auto-passive transfer tests gave negative results.

In spite of all efforts the frequency and severity of attacks progressed. Eventually a definite bronchitis was superimposed and the asthmatic attacks became even more severe and uncontrollable.

It is possible that I was dealing with a so-called intrinsic asthma from the beginning. Undoubtedly when last seen the patient responded to sulfanilamide, which means only one thing to me: Infection was playing a big part at that moment.

It is also of interest to consider the emotional factor in this case.

The outlook for this girl is, in my opinion, not good. Emphysema must eventually become marked. Already the groundwork has been laid for a complicating chronic bronchitis.

Future treatment should consider infection and emotional instability, as well as purely allergic factors.

The fourth case illustrates the allergic approach and management of a case with several allergic manifestations. An adult female, age 31, was referred to me on October 15, 1938 for treatment of hay-fever. The history is as follows: Five years ago at the age of 26, while doing office work, an attack of sneezing occurred that lasted for an entire afternoon. Since then, attacks diagnosed as hay-fever have occurred intermittently. There is no seasonal variation. The attacks in general are more marked at home and are noticed most frequently at bed-time and on arising in the morning. There is associated with the sneezing a watery discharge, severe itching of the nasal passages, and itching and redness of the eyes.

Three years ago intermittent attacks of severe headache developed. These headaches were characterized by unbearable pain, usually one-sided, associated with a feeling of great pressure on the inside of the head. Nausea was present but vomiting did not occur. There were no disturbances of vision. The feeling of pressure in the head was described as being behind the eyes. To use the patients own words: "I was afraid to move my hands from my eyes for fear they would pop out of my head like a shot." Following the attacks the scalp would feel sore. The headaches were frequent in occurrence and would on occasions last several days.

Further there had been noticed, following a warm bath, that widespread, itching urti-

carial lesions would appear on the body. At times an itching, tingling sensation of the lips associated with swelling would occur. The patient's mother is asthmatic.

All evidences of organic disease had been ruled out by an ear, nose and throat examination, refraction of the eyes, and a complete physical examination.

Laboratory findings: An Ewald test meal showed 14 points of total acid and no free acid. A basal metabolic rate previously done had been minus 50. Thyroid extract had raised this rate to normal as was evidenced by further metabolic rate determinations.

On October 17 skin testing was begun. A small amount of stock house dust extract diluted 1:100 was given intradermally. Within 2 or 3 minutes after this intradermal injection a severe headache similar to those complained of was present. Ergotamine tartrate was administered. Relief was obtained in about an hour. The skin reaction to dust was read as four plus.

It was felt that this sudden attack might have been a coincidence. An autogenous house dust extract was prepared and a similar test given several days later. Immediately a headache was precipitated.

Desensitization was begun with a dilution of 1:1,000,000 house dust. Five months later the maximum dose, 0.5 cc. of 1:10,000 dilution, had been determined. Amounts greater than this produced local reaction and precipitated headaches.

With the elimination of feathers from the environment and a few positive reacting foods from the diet there was a marked improvement in the frequency and severity of the hay-fever. Headaches practically did not occur. On one occasion following a severe emotional upset, headache occurred. On another occasion headache followed exposure to a certain perfume. This perfume was eliminated.

The urticaria continued to be very irritating, following a hot bath. Lukewarm baths only were advised and almost complete relief followed. Undoubtedly an idiosyncrasy to heat entered into this complex picture.

This patient has been under observation for over two years and is still doing well. Injections of dust extract have not been continuous. She is intelligent enough to realize that she is not cured, merely controlled.

This case is of interest in presenting several allergic manifestations, at least two of which are often relieved with great difficulty, namely, allergic headache and urticaria.

The fact that headache could be precipitated at will by the injection of an antigen leaves no doubt that house dust is one of the factors in the production of this patient's headache.

The last case I want to present is that of a middle-aged male first seen November 2, 1939. The history is as follows: For the past month he had awakened each morning with the upper or lower lip or both swollen and tingling. As the day would progress, the swelling would subside. There had also been present at different times swelling of the legs, fingers, and itching wheals scattered over the body. On the morning that he was first seen by me he had a rather marked swelling of the tongue and right jaw. For several hours there had been some difficulty in breathing. For the past week he had been suffering from an acute tonsillitis.

Close questioning failed to give any indication as to a possible etiologic factor. The only drug taken regularly was an agar-mineral oil emulsion containing phenolphthalein. Listerine tooth paste was used regularly.

Physical examination revealed an obese, middle-aged male with a noticeable generalized swelling of the right jaw. There was no evidence of acute infection. The tongue seemed normal. The tonsils were enlarged and subacutely infected. The teeth were carious and several were worn off even with the gum margin. Otherwise the examination was essentially normal.

Laboratory findings: Blood counts, including a differential, were normal. The urine was normal. An Ewald test meal revealed no free acid and fourteen points of total acid. Wassermann and Kahn tests were negative. X-rays of the teeth showed several periapical abscesses.

A diagnosis of angioneurotic edema with probable laryngeal involvement, generalized chronic urticaria, periapical abscesses, and subacute hypertrophic tonsillitis was made.

Immediate symptomatic treatment was begun. A hypodermic injection of epinephrin hydrochloride was given. Propadrine hydrochloride, a synthetic ephedrine, was pre-

scribed to be taken at intervals of every 3 or 4 hours, as needed. The diet was temporarily restricted to milk only. He was advised to use a mixture of salt and soda as a tooth powder and to omit all other medication except as directed.

All skin tests were negative including that to an extract made from his own house dust.

Dilute hydrochloric acid after food was given. Histamine phosphate desensitization was begun.

There was some improvement, especially of the swelling of the mouth and face. No further interference to breathing occurred.

Various combinations of diet were tried but some generalized urticaria and occasional angioneurotic edema persisted. Histamine or torantil was tried with no avail.

Ten weeks after first being seen, the patient walked into the office with a tremendous upper lip and with an urticaria widespread from his heels to his face. Except that there was no difficulty in breathing, his condition was as acute as when first seen.

The night before he had taken for his cold, which had persisted intermittently, "Four-Way" cold tablets. It was found that the four magical ingredients of these tablets are aspirin, magnesium oxide, quinine, and phenolphthalein. Only then did the patient recall that the giant swelling on the day of his first visit was followed by the use of Vick's nose drops. This medication had been used intermittently during the past ten weeks. These drops contain oil of wintergreen or methyl salicylate. On further investigation it was found that Listerine tooth paste also contains methyl salicylate.

It was suggested that we might be able to determine definitely whether he had an idiosyncrasy to salicylate, quinine or both. He had no desire to determine this.

With the removal of all salicylates the urticaria and angioneurotic edema cleared. To date, over one year later, there has been no recurrence.

This case illustrates the extreme sensitivity that may be encountered in drug allergy and the necessity for the removal of all the offending agent. It illustrates the difficulty that is usually encountered in the treatment of chronic urticaria. Sometimes skin tests help, but not often. Unless an offending agent can be found the results of treatment are poor.

SUMMARY

1. A complete history, physical examination and certain laboratory examinations should be done on each patient to assure a correct diagnosis and to rule out complicating pathology.

2. Good medical judgment should guide allergic management, especially in regard to the withdrawal of essential foods from the growing child and the undernourished adult.

3. In order to obtain the cooperation essential for successful management, the patient should be fully informed concerning the nature and treatment of allergy.

4. In the absence of definite information as to an etiologic agent, the symptomatic treatment of an allergic condition is usually unsatisfactory.

5. The details of allergic management must be individualized.

6. Five clinical cases have been presented to illustrate the details of allergic management.

DISCUSSION

PAPERS OF DRS. CLIMO AND WARRICK

Dr. Marion Davidson (Birmingham): Both essayists have correctly stressed the importance of careful differential diagnosis before starting the treatment of asthma. All cases of difficult breathing accompanied by wheezing noises in the chest are not necessarily true allergic asthma.

Foreign bodies in the air passages will occasionally produce such a train of symptoms. This fact is of especial importance in cases of supposed asthma in infants and young children. New growths within the air passages or pressing from without occur in all age groups but are of especial importance in cases with onset after middle life.

The x-ray will almost always show metallic objects within the chest cavity; such, for instance, as pins or tacks or nails. The x-ray will also show some types of growths, particularly aneurysms of the large vessels pressing on the trachea or bronchi. Sharply circumscribed growths in thin chests will sometimes be shown by the x-ray.

The bronchoscope is the instrument of last resort in the diagnosis of foreign bodies and new growths. I have heard no less an authority than Dr. Chevalier Jackson himself say that all asthmatics should have bronchoscopic examination. I mention this merely because I so heartily disagree with that idea. To attempt to submit all asthmatics to bronchoscopic examination would be to complicate further the already too complicated procedure of allergic diagnosis.

The diagnostic acumen of the physician must be depended upon to determine which cases should have bronchoscopic examination and x-ray also. Much less harm will be done in the long run by the occasional failures of judgment than by indiscriminate bronchoscopy.

The occurrence of sibilant and/or sonorous rales in both phases of respiration, and particularly in expiration, and in connection with other well known criteria of asthma is strong presumptive evidence of true allergic asthma. My feeling is that sibilant and sonorous rales are as pathognomonic of asthma as is any physical sign in medicine.

Dr. Climo describes the treatment of bacterial asthma with the sulfonamide drugs. It seems that the development of these drugs for the treatment of bacterial infections has been one of the greatest advances of modern medicine. My own idea of the relation of bacterial infections and asthma is that when they occur together the infection is purely a complication and not the primary cause. It seems to me that the local skin reaction and the constitutional symptoms produced by bacterial toxins and those produced by antigenic or allergenic materials are so different as to mark the two processes different.

No doubt bacterial infection occurs in allergically sensitive tissues and it would be strange indeed if this were not so. It is, however, an old observation that allergic tissues are unusually resistant to bacterial invasion. Many severe asthmatics suffer for years from their trouble without ever having pneumonia. Many who do have the diagnosis of pneumonia made at times recover so promptly, without any treatment, as to cast doubt on the diagnosis.

Dr. Warrick has pointed out the fallibility of skin tests. Skin tests are certainly our quickest and best approach to the question of cause. My own reaction is one of wonderment that skin tests are as good as they are and not that they fail us or lead us astray in some cases. Whenever I think the patient can stand the knowledge I point out that there is nothing perfect in medicine as yet and certainly skin tests are far from perfect.

There are many causes for the failure of tests. The extracts themselves are imperfect. The technique of their application offers many sources of error. But even after this the possible number of causes is so great that any routine series of 150 to 200 tests can only contain most probable causes. The mode of operation of routine allergens is obscure in some cases. To illustrate the former point, a patient recently returned from Baltimore where they had diagnosed the cause of his skin irritation as the cleaning fluid used on his suits when I thought I had found the cause in foods. The last point is illustrated by the patient with summer hay-fever whose only large reaction is to horse dander and who has been promptly relieved by a few horse dander shots each season for several years even in the total absence of any known seasonal contacts with that allergen.

The subject of the treatment of asthma is so large that in the time allotted I have only attempted to touch on two or three points in these papers. The two papers complement each other nicely to form a well rounded resume' of the subject and I think we are fortunate in having had these presentations on the program.

Dr. C. K. Weil (Montgomery): Both Dr. Warrick and Dr. Climo have pointed out the fact that the diagnosis of asthma, the determination of its cause and the proper selection of the course of treatment are all complicated procedures. Dr. Warrick is correct in stressing the point that the facts brought out by skin testing must check with the history of the case. He is also correct in stressing the fact that food tests must not be relied on as completely as in the case of inhalants and pollens. In his case records he has shown how complicated some of these cases may be and how with time and patience good results can be obtained.

Dr. Climo's paper should certainly give one a better idea of the many methods of treatment which are available for the treatment of asthma, and one should become familiar with most of the methods mentioned before one can consider oneself qualified to treat these cases.

The most dramatic part of Dr. Climo's paper deals with the use of the sulfonamide drugs in the treatment of certain types of status asthmaticus. No matter how dramatic this may sound, I can assure you that it is no exaggeration. On the other hand, I wish to stress the fact that this form of therapy is not applicable to any types of asthma unless evidence can be found to prove that infection of the respiratory tract is responsible for the symptoms.

With the advice contained in these two papers one should have a good understanding of the methods of handling the asthmatic patient. If success is to be obtained in the treatment of any disease so chronic in its nature as is asthma, the physician must be able to encourage his patient to continue with treatment and he must have enough confidence in himself and in his method of therapy to be convinced that relief may eventually be obtained. One should not be discouraged by a few failures. The percentage of cures in the case of cancer is far less than the percentage in the case of asthma. I am convinced that by thorough study, wise medication, control of the individual's habits, prolonged observation, critical analysis of all responses to treatment and a good deal of common sense, much can be done to obtain relief from those paroxysms of dyspnea which haunt the life of every asthmatic.

Pyuria—Merely to make the diagnosis of pyelitis, without consideration of the location of the trouble and the causative organism, is to overlook a very important part of the pediatrician's work. A complete examination should be made to determine, if possible, infection elsewhere in the body. The frequency of kidney infection associated with otitis, gastro-intestinal disease and tonsillitis, is well known. Probably as important as treating the condition is to determine the presence of associated infections, which must be treated diligently and cleared as rapidly as possible if desired results are to be obtained in clearing the urine.—*Ashby, South. M. J., July 1941.*

OBSTETRIC ANALGESIA AND ANESTHESIA*

By

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We are told that labor in the primitive woman is relatively painless. In our own country we know that the women of the American Indian bear children while continuing with their daily tasks. Evidently they suffer no more pain than the animals around them. DeLee insists that in the birth of a child pain has been greatly exaggerated, that by proper education through many generations woman would learn again that labor is a natural process, and would approach it without fear and therefore without much pain. It is true that many labors are well borne without the aid of any anesthetic. However, the influence of modern life is evident in the woman of today. As far back as we have any records, midwives were using many methods and concoctions for the relief of pain in childbirth. In biblical times, the women were "crying in pain to be delivered."

Modern women, also, are expecting and demanding relief from pain during labor. An attempt is being made by the medical profession to meet that demand. The efforts at first were hindered in no small degree by superstitious laymen, clergymen and even physicians who still believed in following literally the biblical injunction, "In sorrow shalt thou bring forth." Within recent years progress has been accentuated. The evolution of new agents and methods for their administrations have become so refined that one is justified in saying that a revolution is in process of accomplishment.

In searching medical literature, we find that practically every sedative, narcotic and anesthetic drug in the pharmacopeia has been used for the relief of pain in childbirth. In the early part of the nineteenth century hypnosis was tried and claims of great success were made by its advocates.

The modern history of pain relief in obstetrics dates from the work of Simpson in England, who introduced ether and chloroform for use in obstetrics in 1847, and that of Channing, with the same drugs, in Bos-

ton a few years later. Ether and chloroform were used chiefly during the next ten years with varying degrees of success. Most of us are familiar with both the advantages and disadvantages of ether and chloroform.

Ether is slow in producing any analgesia and, if carried to the effective point, decidedly reduces the strength and frequency of uterine contractions. Often it also causes troublesome nausea and vomiting, not infrequently producing a severe bronchitis. However, because of its wide margin of safety it has a field of usefulness in obstetrics that so far has not been replaced by any drug.

Chloroform is a dangerous drug because of its narrow margin of safety to the mother. It sometimes produces changes in the liver which simulate acute yellow atrophy and may cause death to the mother long after delivery. It does have the advantage of producing quick and satisfactory analgesia with only a few inhalations. It may be administered with the simplest kind of apparatus. Some authorities warn us that chloroform has no place in obstetrics, but I suspect that a considerable number of doctors who deliver many babies in homes might give those same authorities some very valuable lessons in the art of administering chloroform during childbirth.

Nitrous oxide-oxygen was introduced about 1880; developed and popularized by Webster, Lynch and Davis at the Presbyterian Hospital in Chicago, and by Guedel in Chicago. The consensus of opinion in America at the time of the first World War was that nitrous oxide-oxygen in the hands of the initiated, supplemented at times by other drugs and methods, approached the ideal of pain relief. The chief objection to nitrous oxide-oxygen is that it requires expensive and cumbersome apparatus for its administration, and an experienced person to administer it. Also, it may produce changes in the vital organs in both the mother and the child which are detrimental to the future health, especially if administered over as long a period as the first stage of labor sometimes is. It is a useful and fairly safe method for use in an institution or home where competent help is available during the second stage of labor. Since the first World War a number of additional methods have been developed and used rather widely.

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In 1923 Lembhart and Carter discovered the anesthetic effect of ethylene. Within a few weeks Heaney and his associates at the Presbyterian Hospital in Chicago began using ethylene-oxygen analgesia and anesthesia in obstetrics. Ethylene is more satisfactory than nitrous oxide because a higher percentage of oxygen is used, and in operative obstetrics relaxation is obtained more nearly approaching that secured by ether or chloroform. The most important objection to ethylene is that it is an inflammable gas and will explode readily when mixed with oxygen or air. Several fatal explosions have occurred. Ethylene is considered dangerous when given as an intermittent analgesia where a high percentage of oxygen is used.

In 1902 Von Steinbuchel first suggested the use of scopolamine and morphine analgesia in obstetrics. In the next few years he reported the successful relief of pain during childbirth. After some twelve years of use and abuse of these drugs, they were discovered by the lay press, and the women of America were told of this wonderful and painless childbirth. Within a few months twilight sleep became a fad. The relief of pain became the chief problem of the average physician who practiced obstetrics. Its dangers are now known to all intelligent physicians.

Spinal anesthesia was first used in surgery in 1899. Within the same year an attempt was made to use it in normal and operative obstetrics by Hopkins, Sinclair and others. It is a dangerous drug in normal labor, insofar as the mother is concerned, its only place of usefulness being in operative obstetrics.

Since 1924, at the New York Lying-In Hospital, Gwathmey has developed an analgesic consisting of large doses of morphine in combination with magnesium sulphate, administered hypodermically, and colonic ether-oil. The chief advantage of the colonic ether-oil over inhaled ether is that the action is continuous over a considerable time. However, its physiologic action is unchanged and should not be given when inhalation ether is contraindicated. It has the same tendency to reduce the frequency and strength of the uterine contractions, thereby to slow or stop labor. Pharmacologists question the value of adding magnesium sulphate. Some claim it is better to omit it. In later years, at the New York Lying-In Hospital, it was found

necessary to add quinine to the ether-oil in order to overcome the tendency to slow up or stop labor. The addition of quinine raises the question whether it is ever wise to give quinine by any method during labor. Its ability to strengthen uterine contractions is not questioned. However, if it is given in sufficiently large doses to bring into play its oxytocic powers, it may permanently impair the hearing of the unborn baby. The objections to the Gwathmey method are its tendency to slow up labor, and the fact that it requires a rather elaborate set up for its administration and the constant attention of a trained attendant the entire time it is being used. In the hands of those trained in its use, it is a very valuable addition to obstetric procedure.

The oral, intramuscular, rectal and intravenous administration of various derivatives of barbituric acid, alone and in combination with some of the methods mentioned above, has been used and recommended by a number of competent observers. These drugs alone are of value chiefly in the first stage of labor. In combination with some of the other methods very satisfactory results may be obtained throughout labor.

An anesthetic agent to be ideal in obstetrics must fulfill three purposes; namely, relieve pain, facilitate delivery, and protect the fetus from anoxemia throughout labor. The necessity for relief of pain is evident. However, if the method employed lengthens labor, makes its normal termination less likely, or adds an element of danger to the fetus or mother, and if such method is not practical under circumstances which exist at the time and place of delivery, it is not justifiable. Many obstetricians are convinced that satisfactory methods are available, and that by carefully selecting the method that is best suited to each individual case labor may be facilitated by their use.

It is not the purpose of this paper to offer any new method or to urge the use of any one method. It is a plea to the profession to use some method or combination of methods selected under the specifications given above for an anesthetic agent in obstetrics, one suited to the circumstances existing at the time of delivery, using that method to make the ordeal of childbirth more bearable.

The method used most in our own clinic is a combination of morphine, scopolamine

and nembutal, with ether or nitrous oxide-oxygen.

As soon as the patient in labor enters the clinic, she is prepared and the colon is thoroughly cleansed with a soapsuds enema. When the necessary dilatation of the cervix is obtained, which, in a primipara, is about 4 cm. and in a multipara 2 cm., provided true labor is established, three nembutal capsules or four and one-half grains are given by mouth. Thirty minutes later 1/100 grain of scopolamine and 1/8 grain of morphine are given by hypodermic. For the average patient, primipara or multipara, no further medication is necessary. The patient is soon sleeping between pains, rousing only during the uterine contractions and may cry out and move herself about on the bed. No effort is made to restrain her but attendants are warned not to let her fall off the bed. The patient continues in this condition for four to six hours, during which time dilatation is complete and the head is on the perineum. Occasionally in a primipara it is necessary to give additional nembutal or even repeat the hypodermic of scopolamine, omitting the morphine. Delivery is completed with a few inhalations of ether or nitrous oxide-oxygen, the anesthesia being carried deeper if any repair work is needed. A large percentage of multiparae will deliver by this method spontaneously. A few require delivery by perineal forceps. We deliver most primiparae with mediolateral episiotomy and perineal forceps. Usually the patient has fully reacted within an hour after leaving the delivery room, and remembers nothing of labor after the hypodermic was given.

To illustrate the application of this method, I have selected one hundred consecutive cases delivered in our clinic which I assume are representative of the several hundred delivered since we began using this method.

Of the one hundred cases, forty-six were primiparae and fifty-four, multiparae. We were able to apply the method as described above to forty of the forty-six primiparae and thirty-four of the fifty-four multiparae. Therefore, out of the one hundred cases, the method was applicable to seventy-four per cent and not applicable to twenty-six per cent. Of the seventy-four cases in which the method was used the average duration of labor was five and one-half hours after

the first medication was given. In sixty-one or eighty-two per cent of these cases the results were classed as good or satisfactory, this rating being given to those who remembered nothing or only disconnected intervals during the first stage. Ten cases or thirteen per cent were classed as fair, or those patients who remained conscious most of the first stage, complaining of pain at the time of uterine contractions but were quiet and comfortable otherwise. Only three cases or four per cent were classed as failures, the analgesia being of little or no help to them. All three of the patients vomited some of the nembutal and could or would not retain that given by rectum.

There were no stillbirths in the seventy-four cases, and sixty-two of the infants breathed immediately. Eight of the infants were slow to breathe and had to be resuscitated. There were no harmful effects on the mothers. We had no cases in which excitement was a serious objection. One primipara remained under the influence of medication for about eight hours after delivery, during which time she was excited, talked more than usual and was very happy and contented with her surroundings, not remembering afterwards anything she did or said. One elderly multipara could not orientate herself for twenty-four hours after delivery, during which time she complained of dizziness and was unable to coordinate her movements. However, recovery was complete.

Of the twenty-six cases in which the method was not applied twenty-one were multiparae. Nineteen of these entered the clinic so far advanced in the first stage that no analgesia was necessary. All of these were delivered with ether or nitrous oxide-oxygen during the second stage. In the other two cases labor was induced, and on account of the irregular first stage no medication, or only a small amount of nembutal, was given. They were delivered with nitrous oxide-oxygen during the second stage.

Five of the twenty-six cases were primiparae, two of which had premature infants, and three had slow, irregular pains during the first stage, and medication was withheld until too near the second stage to be of any value.

SUMMARY

The history of the development of agents of pain relief in obstetrics is briefly reviewed. One hundred cases are reported in which the analgesic and anesthetic properties of nembutal, morphine, scopolamine and nitrous oxide-oxygen or ether were used. Among the one hundred cases there were fifty-four multiparae and forty-six primiparae. The routine method as described was applied to seventy-four of the cases and was not applicable to twenty-six. Of the seventy-four cases, the results were classed as good or satisfactory in sixty-one or eighty-two per cent, fair in ten cases or thirteen per cent, and as a failure in only three cases or four per cent. There were no harmful effects noted to the mothers or the infants.

While we do not feel that the ideal anesthetic for obstetrics has yet been found, we do believe that the method described is a valuable addition to our obstetric procedures. If it is properly applied it will harmlessly relieve much of the pain of labor for the mothers and give the physicians many grateful patients.

DISCUSSION

Dr. T. M. Boulware (Birmingham): Dr. McCown has given us a very comprehensive outline of the various analgesic or anesthetic agents available for women in labor. Those of us who confine our work to obstetrics must of necessity employ analgesia as well as anesthesia. We would not have a practice very long if we did not. I am quite sure that some analgesics employed in hospital practice would be neither advisable nor feasible for home confinements. With the wide range of so many different pain relief measures available, we should individualize both our choice of analgesia and our dosage. Each of us has his own preference. My own choice, like that of the essayist, is scopolamine-nembutal. Unless the labor promises to be prolonged or unless a complete rest period is advisable, I seldom use morphine. In my experience, nembutal is productive of more mucus and saliva at the time complete anesthesia is administered, so for that reason atropin just before anesthesia is routine for my patients receiving nembutal. For some multiparae, where delivery may be expected in an hour or two, sigmodal, a variation of the Gwathmey's mixture, is occasionally used.

For complete delivery anesthesia, I prefer drop ether in most cases. Ethylene is used in certain selected cases, and, if acute upper respiratory infection is evident, pentothal sodium, intravenously, is usually given my patients. I have administered this to 43 cases for delivery and to 29 cases for cesarean section. I have noticed no untoward fetal effects if delivery is accomplished within a reasonable length of time. For version ether is

superior to all other anesthetics; as a second choice I would choose ethylene. I do not use chloroform and I seldom use nitrous oxide. Pentothal for delivery is used only in selected cases, the most frequent indication being upper respiratory pathology. Contraindications are toxemia cases with questionable liver damage, cases where version is contemplated, and any case with a dry, tetanic uterus.

Women in labor surely deserve some form of pain relief although the place of delivery and the type of delivery will influence our selection of agents to be used. The paramount question is just what agents will be safest for this particular patient under this particular set of circumstances.

DRUG ERUPTIONS*

By

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The term drug eruption, or dermatitis medicamentosa, is used to designate those skin eruptions which follow the ingestion or injection of drugs and are produced by their internal action. While local skin lesions may be produced by the external application of various drugs, especially antiseptics, these are usually called dermatitis venenata.

Almost all drugs taken internally may produce some form of cutaneous eruption, although some are more frequent offenders than are others. Some reactions may be due to an overdosage and some to a too-long continued use of the drug; but many occur even when the drug is administered properly. Frequently the eruption is produced by a much smaller amount than is necessary to produce the pharmacologic effect of the drug. These can be explained only as being due to a peculiar reaction on the part of the patient which is called hypersensitivity, or, probably better, idiosyncrasy. In some instances, such as urticaria due to the injection of animal serum, circulating antibodies are produced in the patient, but in the vast majority of the cases produced by chemical drugs no antibodies can be demonstrated.

Many different types of skin lesions are produced by drugs. Even the same drug may produce numerous types of eruptions in different individuals, and entirely unrelated drugs may produce the same type of eruption. For instance, a generalized urti-

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caria may be produced by animal serum, salicylates, quinine and the iodides; and an iodide alone, in addition to urticaria, may produce a papular eruption, pustules, bullous lesions and even fungating growths.

The time at which an eruption develops after the drug has been taken may vary widely. The erythematous eruptions usually appear soon, from a few hours to a few days, whereas the ulcerations due to a bromide may not develop until the drug has been taken for several weeks or months. Drug eruptions may be limited to certain areas, such as the mouth, face, forearms or lower legs, or they may be widespread. The majority of them are symmetrical.

The generalized erythematous types of drug eruptions may closely simulate secondary syphilis or the acute exanthemata. These conditions should always be carefully considered and ruled out before incriminating a drug. Some drug eruptions are distinctive enough to suggest the medicinal cause, but this is not always so. A careful history is very important in arriving at a diagnosis. Skin tests are not of much value in establishing the diagnosis in the case of chemical drugs taken internally. To be sure of the exact cause, it is frequently necessary to carry out a therapeutic test at a later date. This is done, after the rash has subsided, by giving a small dose of the drug under suspicion and noting a recurrence of the eruption.

I wish to review briefly some of the more frequent and typical types:

Argyria: The administration of silver salts may be followed by the development of the peculiar and characteristic ashen-grey pigmentation of the skin known as argyria. In mild forms this condition is not uncommon. In addition to silver nitrate, argyria may be produced by the prolonged administration of neosilvol, argyrol and other silver compounds. The deposition of the metallic silver salts occurs in the skin of the entire body, but the typical pigmentation becomes much more marked on the exposed parts. This is thought to be due to a chemical, photographic reaction and many attempts have been made to reverse this process, but without practical success.

Bismuth and Mercury: Both of these metals frequently produce a peculiar bluish-black pigmentation along the gum margin.

This is thought to be due to the deposition of the compound formed when bismuth or mercury combines with the sulfides liberated from tartar along the gums. A stomatitis may be produced if oral hygiene is bad. Bismuth is not nearly so likely to produce a stomatitis as mercury. Another type of reaction which may be produced by bismuth is a generalized erythematous eruption, closely simulating pityriasis rosea.

Arsenic: The following are the more frequent types of cutaneous reactions produced by arsenic:

- I. Inorganic: (a) Early: Widespread erythematous, papular, bullous or exfoliative dermatitis.
(b) Late: Pigmentation, generalized mottled type. Keratoses, especially of palms and soles. Carcinomas.
- II. Arsphenamines: (a) Pruritus and urticaria.
(b) Mild erythemas (9th day erythema).
(c) Generalized scarlatiniform and morbilliform eruptions.
(d) Herpetic and lichenoid eruptions.
(e) Generalized exfoliative dermatitis.
(f) Icterus and purpura.

There is real danger in the prolonged administration of inorganic arsenic. Fowler's solution seems to be the most frequent offender, probably because it is so easy for the patient to continue its use without advice. Every prescription for arsenic should be clearly labeled, "Do Not Refill." A generalized mottled pigmentation is the most frequent manifestation. This is so characteristic that it is almost diagnostic. Multiple keratoses may appear later, especially on the palms and soles. These are of special importance because they so frequently give rise to carcinomas. Reactions to the arsphenamines should be watched for carefully. Each syphilitic patient should be questioned specifically in regard to itching before being given each injection. Mapharsen seems to be a less frequent offender than either arsphenamine or neoarsphenamine. In the management of a severe arsphenamine dermatitis good nursing care is of prime importance. Intravenous sodium thiosulphate and glucose are helpful.

Barbiturates: These preparations, especially phenobarbital, may produce a generalized, macular or papular erythematous eruption. If the drug is continued, a universal exfoliative dermatitis may result. Several deaths due directly to this cause have been reported.¹

Dilantin sodium, a new anticonvulsant used in the treatment of epilepsy, may cause a marked hypertrophic gingivitis.²

Aspirin rarely produces cutaneous lesions, although occasionally erythematous, papular and hemorrhagic lesions have been reported, as well as urticaria and angioneurotic edema. Antipyrine and amidopyrine are more frequent offenders.

Quinine not infrequently produces urticaria. It may also cause a generalized scarlatiniform eruption as well as erythema multiforme. Quinidine may produce the same types of eruptions.

Atabrin may cause a deep yellow pigmentation which resembles jaundice.

Morphine and codeine tend to produce generalized itching. For this reason they are contraindicated in the treatment of severe cases of dermatitis.

Animal serums frequently produce urticaria and scarlatiniform eruptions.

Vitamin concentrates may cause generalized erythematous reactions in infants and also eruptions closely resembling infantile eczema.

Phenolphthalein: The most characteristic reaction due to phenolphthalein is the so-called fixed eruption. This term is somewhat misleading. The lesions need not remain present all the time, but each time the drug is taken the eruption recurs at the same site. Fixed eruptions may also be produced by other drugs such as antipyrine, the barbiturates and the arsphenamines.

Phenolphthalein is a frequent offender. This is probably because it is contained in so many proprietary preparations. Belote³ published a list of more than 100 proprietary

compounds that contain phenolphthalein; included in this list are all types of well known compound laxative pills, bile salt compounds as well as headache and fever remedies. In addition to the fixed eruption, phenolphthalein may also produce stomatitis, generalized erythematous reactions and even bullous eruptions.

Sulphonamides: Scarlatiniform and morbilliform eruptions are the most frequent cutaneous reactions to sulfanilamide and its derivatives, aside from cyanosis which of course is common. Other types may also occur such as urticaria, erythema multiforme, fixed eruptions, stomatitis, purpura and even exfoliative dermatitis. The eruption is inclined to be most marked on the exposed parts. This is especially pronounced in ambulatory patients. Sulfathiazole is peculiar in that it is especially apt to produce erythematous nodular lesions on the legs and congestion of the conjunctiva and sclera. The incidence of cutaneous reactions to these drugs for hospitalized patients receiving full dosage is about 2% for sulfanilamide and sulfapyridine, and about 5% for sulfathiazole.⁴

Iodides: The iodides frequently produce skin eruptions and these may be of many types. The most common is an acneform eruption, which consists of numerous follicular pustules having brightly erythematous bases. These may be confined to the usual acne distribution of face, neck and shoulder areas or they may be more widespread. Patients with acne vulgaris will almost invariably suffer a marked flare-up when given an iodide. Purpura, urticaria and erythema multiforme are other not uncommon reactions to iodides. Fungating plaques resembling epithelioma and bullous lesions may also be produced. Numerous fatal cases have been reported from comparatively small amounts of an iodide.

Bromides: The bromides may produce eruptions similar to those of the iodides. Follicular pustules are the most frequent type. The distinctive lesions of bromides are the inflammatory fungating lesions of the legs. These develop slowly and usually only after the drug has been taken for a considerable period of time. Fungating lesions may be

1. Wile, U. J., and Benson, J. A.: Exfoliative Dermatitis Due to Phenobarbital with Fatal Outcome; Report of Two Cases, *Ann. Int. Med.* 13: 1243 (Jan.) 1940.

2. McCarthy, F. P.: A Clinical and Pathologic Study of Oral Disease, *J. A. M. A.* 116: 16 (Jan. 4) 1941.

3. Belote, G. H., and Whitney, H. A.: Phenolphthalein Compounds, *Arch. Derm. & Syph.* 36: 279 (Aug.) 1937.

4. Long, P. H., et al.: The Toxic Manifestations of Sulfanilamide and Its Derivatives, *J. A. M. A.* 115: 364 (Aug. 31) 1940.

produced in nursing babies, the drug being transmitted in the mother's milk. In the treatment of bromide eruptions it is helpful to give sodium chloride. Wile, et al.,⁵ demonstrated that there was a ready substitution of chloride for the bromide in the body fluids and suggested the use of salt solution intravenously in cases of obstinate bromide lesions.

This is by no means a complete list of skin reactions produced by drugs. I have attempted only to mention the more frequent and typical ones and to point out the wide variety of lesions that may be produced. I wish to emphasize the fact that cutaneous reactions to drugs may mimic a great many other dermatoses. In fact, as far as the skin is concerned, drug eruptions, like syphilis, may also be called a great imitator. In the evaluation of any dermatosis it is well worth while to take a brief history of previous internal medication and to consider carefully the possibility of this being a causative factor of the present illness.

CONCLUSION

1. The development of a cutaneous eruption is one of our most valuable signs that a given drug is not being well tolerated.

2. Drug eruptions may mimic a wide variety of other dermatoses; they may well be called another great imitator of cutaneous medicine.

3. The essential point of treatment is to recognize the condition and stop the drug.

DISCUSSION

Dr. Frank Riggs (Montgomery): We are indebted to Dr. Snow for his timely talk on a subject which should always be kept in mind by every practitioner of medicine.

Many of these drug eruptions cause serious sickness and economic loss; too many are fatal because the true condition is not recognized in time and the offending drug withdrawn.

I would like to emphasize two points brought out in the paper: first, the danger of prescribing Fowler's solution with no time limit; and second, the danger from barbiturates.

I have recently seen a spinster, in late middle age, who had taken this solution for seven years for pellagra. The result was multiple warty keratoses of the palms and soles, in four of which malignant degeneration had begun.

That phenobarbital can cause fatal intoxication, even when given in small doses and promptly

stopped, was demonstrated to us in Montgomery not long ago. Two cases of generalized exfoliative dermatitis, superimposed on a localized dermatitis caused by salicylic acid, proved to be due to barbiturates. In one theominal had been taken without trouble for years until a large area of skin was irritated by an ointment containing salicylic acid and sulphur. Several acute exacerbations occurred before the offending drug was recognized and withdrawn.

A few cases of this kind lead me to the conclusion that barbiturates should be given with great caution to any person with an irritated skin.

THE DIAGNOSIS AND TREATMENT OF INTESTINAL POLYPS*

By

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Polyps are known to occur in both the large and small intestine, but are more frequently found in the former location. To judge from the reports in the literature, their occurrence is not so rare as is generally supposed, especially in the colon and rectum.

Literally, the term, polyp of the intestine, may be applied to any tumefaction, either sessile or pedunculated, which projects into the lumen of the bowel. Histologically, polyps may be hemangiomas, arising from the vascular elements of the intestinal wall; fibromas, myxomas and lipomas from the areolar tissue; myomas from the muscular elements; and adenomas, from the mucosa.

By far, the most common type of polyp found in the intestinal tract is the adenoma, this type being more numerous than all of the other varieties combined. Because of this marked preponderance of adenomas, and because of common usage, since the extensive study and classification of polyps by Erdmann and Morris,¹ the term polyp, as applied to such a growth in the intestine, and especially in the colon and rectum, has generally come to mean an adenoma. It is in this sense that the term polyp is used in this paper.

Polyps of the colon and rectum may vary in size from small sessile excrescences, 5 mm. or less in diameter, on the mucous sur-

*Read before the Association in annual session, Mobile, April 15, 1941.

1. Erdman, J. F., and Morris, J. H.: Polyposis of the Colon; a Survey of the Subject, Surg., Gynec. & Obst. 40: 460-468, 1925.

5. Wile, U. J., et al.: Studies on the Experimental Aspects of Iodid and Bromid Exanthems, Arch. Derm. & Syph. 6: 529 (1922); and ibid 8: 407 (1923).

face, to pedunculated tumors of various sizes. They may be single or multiple, large or small, and occur in any portion of the large bowel. They may involve the entire colon and rectum, or occur in only a small segment. It is generally agreed that the portions of the large bowel most frequently affected are the lower sigmoid and rectum.

Polyps of the colon and rectum may be classified as follows:

1. Pseudopolyps: These are of inflammatory origin and are usually seen associated with chronic ulcerative colitis,² or other inflammatory conditions of the large bowel, such as amebiasis.³ This type is the acquired polyp of Erdmann and Morris, or the post-inflammatory polyp of Wesson and Bargaen.⁴ Grossly, these lesions may resemble true adenomatous polyps, but histologically they are seen to be composed of buds or tufts of mucosa, or granulation tissue, which show evidence of benign regenerative hyperplasia. Coffey and Bargaen⁵ have shown that occasionally true adenomatous, and even carcinomatous, proliferation ensues. On the other hand, Swinton and Warren,⁶ after a microscopic study of a large series of intestines from patients with chronic ulcerative colitis, reached the conclusion that chronic ulcerative colitis is not a factor predisposing to the development of polyps.

2. Multiple diffuse polyposis of the colon: This condition is a true adenomatosis and has been given various names, such as polyposis, multiple polyposis, disseminated polyposis, polypoidosis and multiple polypoid disease of the colon. That this condition has a definite hereditary and familial tendency, if not truly of congenital origin, has been rather conclusively shown by the studies of

Lockhart-Mummery and Dukes,⁷ McKenney^{8, 9} and others.

Of these two groups the majority of cases of polyposis will be found in the first. Both of these conditions are rare, compared to the third group.

3. Single polyps, or multiple polyps, in that two, three, or a dozen or more, may be scattered throughout the colon and rectum: In this third group, the polyps, if multiple, often have a segmental distribution, being frequently situated at, or near, the flexures of the colon.

Histologically, many polyps will be seen to retain the normal character of the epithelium, or slight evidence of hyperplasia may be evident, if there are active inflammatory changes. The pedicle of a pedunculated polyp is composed of connective tissue derived from the submucosa and is ordinarily covered with normal mucous membrane. At times the epithelial cells may show failure of complete differentiation into normal mucous membrane. This transition is irregular, and in the peripheral zone of the polyp there is increased cellular activity. Additional changes in the epithelium may be noted where the process of differentiation becomes arrested or completely fails; cells may be found which exhibit only rudimentary characteristics of normal mucous membrane. Beyond this point, it is very difficult, if not impossible, to distinguish between benign polyp structure and carcinoma.

There is practically universal agreement among all writers on the subject that these adenomatous growths are premalignant, or potentially malignant, if not already frankly malignant, at the time of their discovery, and it is on this account that these lesions should assume the greatest importance to both clinician and surgeon.

Lockhart-Mummery and Dukes⁷ are convinced that individuals with multiple adenomas of the colon almost invariably develop cancer in one or more of the adenomas

2. Bargaen, J. A., and Comfort, M. W.: The Association of Chronic Ulcerative Colitis and Multiple Polyps, *Ann. Int. Med.* 4: 122-133, 1930.

3. Hamilton, H. A.; Delprat, Daniel; Weeks, Alanson, and Reed, A. C.: Amebiasis and Pseudopolyposis of the Colon, *J. A. M. A.* 107: 2121-2123 (Dec. 26) 1936.

4. Wesson, H. R., and Bargaen, J. A.: Classification of Polyps of the Large Intestine, *Proc. Staff Meet., Mayo Clin.* 9: 789-794 (Dec. 26) 1934.

5. Coffey, R. J., and Bargaen, J. A.: Intestinal Polyps: Pathogenesis and Relation to Malignancy, *Surg., Gynec. & Obst.* 69: 136-145 (August) 1939.

6. Swinton, N. W., and Warren, Shields: Polyps of the Colon and Rectum and their Relation to Malignancy, *J. A. M. A.* 113: 1927-1933 (Nov. 25) 1939.

7. Lockhart-Mummery, J. P., and Dukes, C. E.: Familial Adenomatosis of the Colon and Rectum: Its Relationship to Cancer, *Lancet* 2: 586-589 (Sept. 9) 1939.

8. McKenney, D. C.: Multiple Polyposis of the Colon: Familial Factor and Malignant Tendency, *J. A. M. A.* 107: 1871-1876 (Dec. 5) 1936.

9. McKenney, D. C.: Multiple Polyposis: Congenital, Heredofamilial, Malignant, *Am. J. Surg.* 46: 204-216 (October) 1939.

after a few years. Martin¹⁰ emphasizes the point that the matter of size apparently has no bearing on the question of whether or not a given polypoid lesion is benign or malignant. Frequently, those only a few millimeters in size will show evidence of definite malignancy. Buie¹¹ believes that, on the basis of histologic evidence, all polyps of the colon and rectum should be treated as being malignant growths, and, whenever possible, destroyed promptly on their discovery.

Any of the previously mentioned histologic types of polyps may also occur in the small intestine, but, as in the colon, the adenoma is the most common. Polypoid disease of the small intestine is a much rarer condition than that of the colon and rectum. According to Shaw¹² there have been only 339 reliably reported cases in the literature. In his study and report of five cases he found that adenomatous polyps of the small intestine occur most frequently in the ileum. Polyps of the small intestine are usually single, of variable size, and show the same tendency toward malignant transformation as those of the colon and rectum.

DIAGNOSIS

Polyps of the small intestine seldom give rise to symptoms until they attain such size as to produce obstruction. The presence of such a lesion may be suspected earlier, in cases of unexplained gastro-intestinal hemorrhage, and, at times, it may be demonstrated by careful roentgenologic technique and interpretation. Obstruction is most often due to intussusception, but may come about by encroachment of the growth itself on the lumen of the intestine. The symptoms are then those of small bowel obstruction and a definite diagnosis of polyp is generally not made until the abdomen is opened. Shaw¹² states that the outstanding feature of polyposis of the small intestine is the production of an intussuscepted mass; and, according to Gaither¹³ the presence of a polyp of the

small intestine should always be suspected in any case of intussusception in an adult.

Polyps of the colon and rectum may occur at any age, and it has been found that the incidence is about equal in the two sexes. However, the condition of multiple polyposis is usually found in the younger age groups and seems to affect males more frequently than females.

There is no group of symptoms that can be considered as pathognomic. Many polyps will produce no symptoms since their capacity to produce symptoms depends largely on their size and location.

Bleeding from the rectum is of frequent occurrence and in the majority of cases will be the presenting symptom. At first it is intermittent in character, but as ulceration and infection of the polyps progress the bleeding becomes more constant. The cause of this bleeding is often erroneously attributed to hemorrhoids by both patient and physician. It is a mistake to make such an assumption, even though hemorrhoids be present, until the rectum and lower sigmoid have been examined with the proctoscope and found normal.

Other symptoms include alteration of stool habit, passage of mucus, a sense of incomplete evacuation of the bowels, tenesmus, and cramp-like pain in the lower abdomen. Actual protrusion of the tumor on defecation may occur if the lesion is situated low in the rectum. Diarrhea, passage of large amounts of mucus, weight loss and anemia are usually more common in cases of multiple polypoid disease of congenital or inflammatory origin.

Digital examination will reveal polyps situated in the lower 8 to 10 cm. of the rectum. The lesions, as palpated by the finger, are soft, pedunculated or sessile masses of varying size. At times, thrombosed internal hemorrhoids and hypertrophied anal papillae are mistaken for polyps.

All patients in whom the presence of polyps of the colon and rectum is suspected should be submitted to proctoscopic examination. By this means polyps in the lower 24 or 25 cm. of the bowel may be visualized and their size, number and location determined. The usual polyp appears as a small tumor from 0.5 to 1 cm. in diameter and may be either sessile or attached to the mucosa of the bowel wall by a pedicle of varying

10. Martin, W. J., Jr.: Polypoid versus Carcinomatous Lesions of the Colon and Rectum, *South. M. J.* 33: 428-432 (April) 1940.

11. Buie, L. A.: *Practical Proctology*, Philadelphia, W. B. Saunders Co., 1937, chap. 13, pp. 343-370.

12. Shaw, E. A.: Polyposis of the Small Intestine, *New England J. Med.* 220: 236-240 (Feb. 9) 1939.

13. Gaither, E. H.: Diagnosis and Treatment of Lesions of the Small Bowel, *M. Clin. North America* 23: 449-511 (March) 1939.

length. Sessile polyps are generally of the same color as the mucosa and can easily be overlooked. In the pedunculated type, the pedicle is of the same color as the mucosa but the polyp itself is darker red. Barnett¹⁴ has stressed the importance of visualizing both the superior and inferior surfaces of the valves of Houston, for often a small polyp of either type situated on the superior surface of one of these valves may escape detection. As the polyps become larger, changes due to irritation and inflammation are seen, and ulceration and sloughing may occur. A rarer type of polypoid lesion, the submucous lipoma, can usually be distinguished from the adenomatous polyp by its larger size and the yellow tinge of the mucosa overlying the tumor.¹⁵

At times, when polypoid disease is suspected, proctoscopic examination will reveal no polyps situated in the rectum or lower sigmoid, but fresh blood trickling down from above may be observed. In such cases roentgenologic examination may reveal the presence of one or more polyps situated in the upper sigmoid, descending colon, or even in the more proximal portions of the large bowel.

The discovery of one or more polyps in the rectum or rectosigmoid should always be followed by roentgenologic examination of the colon in an effort to locate other similar lesions. Polyps are frequently multiple. In 35 per cent of 156 cases reported by Swinton and Warren,⁶ multiple polyps were found. Kennedy¹⁶ discovered multiple polyps in 14 of 41 cases of polypoid disease of the colon in children. Soper,¹⁷ in a series of 61 cases, reported multiple polyps occurring in 95 per cent of them.

If the roentgenologic examination of the colon in cases of polypoid disease consists only of the usual barium enema, many polyps of the colon, especially if small, will be missed. The so-called double contrast method has been almost universally adopted

as being the most efficient and accurate means of demonstrating the presence of polyps in the colon. Originally devised by Fischer,¹⁸ and subsequently modified by Weber,¹⁹ the method consists essentially in the administration of an opaque enema, followed by evacuation of the barium as completely as possible. Air is then insufflated into the colon, under fluoroscopic control, and stereoroentgenograms are taken with the patient on the abdomen. Single polypoid tumors or those which occur relatively sparsely are visualized as rounded, soft projections into the intestinal lumen. In cases of multiple polyposis of the congenital type, a coarse network of shadows, giving a mottled appearance, is seen, which is pathognomonic of the condition. When multiple polyps are secondary to preexisting ulcerative or inflammatory disease, the changes produced by the primary disease predominate in the roentgenogram. The polyps are usually smaller and more irregular in shape than those of multiple polyposis.

Adequate preparation for roentgenologic examination is of the utmost importance. It is essential that all residues and fecal remnants be entirely removed, and the walls of the colon collapsed. Particles of feces or particles of bran adherent to the bowel wall frequently simulate polyps.

Weber and Good²⁰ have called attention to the fact that invaginated appendiceal stumps often have the appearance, roentgenologically, of small polypoid neoplasms of the cecum. The history of an appendectomy will usually aid in determining the nature of the lesion. However, these authors have also observed true polypoid neoplasms in this location which presented an almost identical appearance.

Proctoscopic and roentgenologic examinations should not be considered competitive methods of diagnosis in cases of polypoid disease of the colon and rectum, but rather that each is the complement of the other. The chief function of the roentgenologic ex-

14. Barnett, T. N.: Polyps of the Colon and Rectum, *South. M. J.* 33: 242-245 (March) 1940.

15. Pemberton, J. deJ., and McCormack, C. J.: Submucous Lipomas of the Colon and Rectum, *Am. J. Surg.* 37: 205-218 (August) 1937.

16. Kennedy, R. L. J.: Polyps of the Colon and Rectum in Infants and Children, *Proc. Staff Meet., Mayo Clin.* 15: 108-109 (Feb. 14) 1940.

17. Soper, H. W.: Polyposis of the Colon, *Am. J. M. Sc.* 151: 405-409 (March) 1916.

18. Fischer: Quoted by Weber.¹⁹

19. Weber, H. M.: The Roentgenologic Demonstration of Polypoid Lesions and Polyposis of the Large Intestine, *Am. J. Roentgenol.* 25: 577-589 (May) 1931.

20. Weber, H. M., and Good, C. A.: Invaginated Appendiceal Stumps Roentgenologically Simulating Polypoid Neoplasms, *Radiology* 34: 440-443 (April) 1940.

amination is to reveal changes in the colon above the reach of the proctoscope.

TREATMENT

There is general agreement that removal of all polyps, single or multiple, should be carried out as soon as the diagnosis is established. This should apply regardless of the size or location of the lesion since there is no criterion upon which the malignant potentialities of any given polyp can be evaluated. The size of the polyp is not an accurate index in estimating its danger.

The treatment of polyps of the small intestine is surgical removal as soon as the diagnosis is made. As previously stated, in the majority of instances the diagnosis will not be made until operation is performed for small bowel obstruction. The procedure therefore will depend upon the type of lesion present, the viability of the bowel, the condition of the patient, and other factors. One of several procedures may be applicable: 1. Simple excision of the polyp after opening the bowel, followed by immediate closure; 2. Primary resection of the involved portion of the bowel when there are multiple polyps, when the viability of the bowel is questionable, or when the polyp is grossly malignant; or 3. A two-stage procedure consisting of a lateral anastomosis, and later removal of the affected portion of the bowel.

Polyps situated in the rectum and lower sigmoid, within reach of the proctoscope, are best destroyed or removed by means of fulguration, or diathermy, using the monopolar (Oudin) or bipolar current. A general anesthetic for this procedure is distinctly contraindicated since the cooperation of the patient is essential. Local or sacral anesthesia may be employed to permit dilatation of the anal sphincter and the use of a speculum in those cases in which the lesion is so extensive as to require unusual exposure. Small pedunculated or even sessile polyps may usually be fulgurated without regard to their position in the bowel. This may often be accomplished as an office procedure.

In the case of large single polyps or multiple polyps, fulguration should be performed in several stages, and with frequent observation, until the destroyed tissue has sloughed and healing has progressed to the point where hemorrhage is no longer a possibility.

More caution must be exercised in fulgurating those polyps situated above the pelvic

peritoneal reflection, and on the anterior wall of the rectum, since perforation of the bowel in these locations is a serious complication. A lesion below the peritoneal reflection on the posterior rectal wall can usually be fulgurated more thoroughly without fear of injury to adjacent structures. The other complication following such a procedure is hemorrhage. This is most likely to occur from about the fifth to the tenth day when the slough produced by the charring separates. Bleeding can be very troublesome and even dangerous, and if any great degree of fulguration is required, the patient should be kept quiet and preferably hospitalized for at least this period of time. Buie¹¹ suggests the topical application of radium to the site of fulguration as a means of providing additional insurance against hemorrhage.

In some instances, solitary polyps, or a group of two or three polyps in the sigmoid, are situated too high to be removed or destroyed through the proctoscope. Also, such lesions may be located in the more proximal portions of the colon. In these cases the polyps are best approached intra-abdominally and removed through a small incision in the colon. Thorough exploration of the entire colon should be first carried out to determine the possible presence of other polyps which may not have been demonstrated roentgenologically.

After definite identification of the polyps by palpation, the affected portion of the colon is isolated between the blades of a rubber covered clamp and this portion of the colon, carefully packed off from the remainder of the peritoneal cavity. Through a short longitudinal incision, 2 or 3 cm. in length, made in a longitudinal band, the polyp is exposed and delivered. The pedicle is crushed by a forceps, the base ligated, and the polyp excised with either knife or cautery. The opening in the colon is closed with two rows of sutures, and epiploic tags, when available, are tied over the suture line to afford further protection. Cattell and Swinton²¹ suggest making the suture line extraperitoneal if the closure is not entirely satisfactory.

The chief complications of such a method of treatment are peritonitis, localized or gen-

21. Cattell, R. B., and Swinton, N. W.: The Diagnosis and Treatment of Sigmoidal Polyps, *New England J. Med.*: 222: 535-540 (Mar. 28) 1940.

eralized, or the development of a fecal fistula, the closure of which may be tedious and difficult. Cattell and Swinton²¹ reported a series of ten cases of sigmoidal polyps treated by this method without a death. Mayo and Smith²² reported 62 cases in which transcolonic removal of polyps was carried out, with 2 deaths, or a mortality of 3.2 per cent. They feel that the risk incurred by such an operation is justifiable, because in 39 of the 62 cases the polyps were found to be malignant.

Hedin²³ has proposed a method of treatment for those cases in which only a segment of the colon is involved with polypoid disease, or when relatively few polyps are present throughout the colon. He suggests that those polyps which cannot be reached by means of the proctoscope and fulgurated from below be fulgurated through one or more properly placed colostomies. In his opinion, the danger of perforation of the bowel wall by such a method is no greater than when sigmoidal polyps above the pelvic peritoneal reflection are fulgurated from below.

The treatment of disseminated or multiple polyposis must be radical and undertaken as soon as the diagnosis is established since malignant degeneration occurs with such frequency in this disease. Procrastination may also lead to other serious consequences, such as hemorrhage, obstruction and extensive ulcerative changes.

Ileostomy, followed by total colectomy in stages, including removal of the terminal colon and rectum was formerly the accepted method of treatment. However, with the evolution of diathermy, it has become possible to fulgurate those polyps situated in the rectum and lower sigmoid as previously described, thus clearing those areas of polyps. Following this, temporary ileostomy may be done, then, colectomy, in one or two stages, down to the rectosigmoid and finally ileosigmoidostomy. By such a method, the desired objects in the treatment of this condition, namely, eradication of all polyps and preservation of the natural outlet of the bowel, are accomplished.

22. Mayo, C. W., and Smith, C. H.: Transcolonic Removal of Polyps, *Surgery*: 5: 942-946 (June) 1939.

23. Hedin, R. F.: Polypoid Disease of the Colon; A Proposed Surgical Procedure in Selected Cases, *Surgery* 5: 161-174 (February) 1939.

Mayo and Wakefield²⁴ have reported a modification of the above method which seems to have definite advantages. First, the inconvenience of an ileostomy is avoided, and, second, it is possible to preserve more of the sigmoid portion of the colon which controls the desire for defecation. The procedure consists of five stages: (1) Fulguration of polyps in the rectum and rectosigmoid, a few at a time, until these areas are free of polyps. (2) Ileosigmoidostomy and removal of the right colon and as much of the transverse colon as can be easily accomplished, bringing out the incised end of the remaining portion of the transverse colon as a temporary colostomy. (3) Second stage hemicolectomy, removing the remainder of the transverse colon, the splenic flexure and the descending colon. By palpation of the polyps, the amount of colon to be resected may be judged. The proximal portion of the sigmoid is brought out as a temporary colostomy. (4) Retrograde examination and fulguration of any remaining polyps in the sigmoid. This may require repeated fulguration and the colostomy may be left as a safety valve for some time. (5) Closure of the colonic stoma which reestablishes the continuity of the intestine.

As pointed out by Mayo and Wakefield,²⁴ this method of treatment is applicable only in selected cases. It cannot be used when secondary inflammation has involved the entire colon. Such cases are best treated by permanent ileostomy and, after the inflammation subsides, total colectomy in stages. The method is of particular value in those cases in which the diagnosis has been made early before complications occur, and especially when carcinoma has not involved the colon distal to the sigmoid.

Careful follow-up examinations of the bowel by proctoscopic, and roentgenologic examination if necessary should be carried out at frequent intervals. If recurrence of the polyps or new polyps are discovered, they may be destroyed by fulguration. Should carcinoma develop in the blind end of the sigmoid and be discovered in time, the remaining portion of the colon and rectum can be removed and a permanent ileostomy performed.

24. Mayo, C. W., and Wakefield, E. G.: Disseminated Polyposis of the Colon; A New Surgical Treatment in Selected Cases, *J. A. M. A.* 107: 342-347 (Aug. 1) 1936.

SUMMARY AND CONCLUSIONS

1. The most common type of polyp of the intestinal tract is the adenoma and it occurs most frequently in the colon and the rectum.

2. Cases of polypoid disease of the colon may be classified in one of three groups: pseudopolyposis, associated with inflammatory or ulcerative disease of the colon; multiple or disseminated polyposis of congenital or hereditary origin; cases in which there are single polyps, or a few polyps situated at various locations in the colon or rectum.

3. All polyps of the intestine, especially those of the colon and rectum, should be regarded as being potentially malignant and should be destroyed or removed as soon as possible upon their discovery. Frequently, histologic evidence of malignancy will be found, although grossly the polyps appear benign.

4. Polyps of the small intestine are rarely diagnosed before causing intussusception and obstruction.

5. Rectal bleeding is the outstanding symptom of polypoid disease of the colon and rectum.

6. Diagnosis of the disease can only be made by proctoscopic examination and roentgenoscopic examination of the colon, using the double contrast method. Both should be performed in every case.

7. The treatment of polyps of the small intestine is surgical removal, the method varying with the conditions found at the time of operation, and with the individual case.

8. Fulguration of polyps in the rectum and lower sigmoid is the procedure of choice.

9. Single polyps or sparsely distributed multiple polyps of the colon may be removed by transcolonic excision, or by fulguration through properly placed colostomies.

10. The treatment of multiple polypoid disease of the colon and rectum is a difficult surgical problem requiring multiple procedures. However, it should be undertaken whenever possible because of the serious consequences which develop in the untreated case.

DISCUSSION

Dr. E. B. Frazer (Mobile): In this discussion of intestinal polyps Dr. Thigpen has dealt admirably with a difficult subject. He shows great familiarity with the literature concerning it.

In the past fifteen or twenty years proctology has undergone a progressive evolution similar to that through which urology has passed in the last

fifty years. At first the urologist's concern was largely penile, and until comparatively recently the proctologist was concerned only with lesions around the anal margin. The well-trained proctologist today fully appreciates the relationship of anal and rectal lesions to similar and associated troubles higher up in the gastro-intestinal tract.

All tumors, regardless of their apparent benignity, are relatively malignant. This is true, not only of the benign polyps secondary to chronic irritation and inflammation, but especially to the adenomatous polyps which are quite likely to undergo malignant change at the periphery. While it behooves the proctologist to eradicate by electro-surgical means polyps which are found in the rectum and sigmoid, the question of handling similar lesions in the colon and ileum is a most difficult one. The tremendous mortality following colectomy or lesser operations on the colon which has been the seat of chronic ulcerative colitis, amebiasis, or other chronic dysenteric inflammation is well known to every surgeon. In disseminated polyposis, or the so-called familial or hereditary type where malignancy is so likely to develop, particularly in the third decade of life, radical surgery, of course, offers the only means of cure. On the one hand we have a progressive disabling condition, and on the other, a choice of operation which carries great risk.

No doubt the occurrence of polyps secondary to chronic inflammation is much more common than is usually appreciated. It is my belief that the majority of these polyps disappear spontaneously with subsidence of infection and in only a small percentage of cases will malignancy develop. Moreover, many years may elapse between the time of the colitis and the appearance of malignancy. Of course, it is always necessary to bear in mind that the symptoms of annular obstructing carcinoma of the recto-sigmoid are much the same as those occurring in the infectious types of chronic colitis.

Surgical treatment of lesions in the lower intestinal tract requires great skill and mature judgment. Colectomy should always be performed in stages. Technique as outlined by Rankin is both sensible and satisfactory.

I find that older surgeons, who have been burned in the fire of experience, are usually very conservative if not somewhat timid in urging operative procedures which carry high mortality and especially subsequent morbidity.

Sarcoma of the Uterus—Sarcoma of the uterus, although not rare, is an uncommon tumor of the uterus. It may arise from any of the tissues of the corpus or cervix. The sarcoma which arises in myomas is usually less malignant than that arising in the general musculature of the uterus. The endometrial sarcomas are much less common than the muscle tissue tumors and are quite malignant. Mitotic counts appear to be of importance in determining the prognosis in a case of sarcoma of the uterus.—*Ziskind, New Orleans M. & S. J., June '41.*

GALLBLADDER SURGERY*

INDICATIONS AND CONTRAINDICATIONS

By

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The great incidence of gallbladder disease and the resulting high mortality and morbidity rates, which have not diminished appreciably in recent years, have caused an increased attention to be focused on the problem. Well known internists have become less conservative in their views—some recommending surgery in cases formerly treated by medical means. Surgeons, on the other hand, are now advising medical management of certain cases that once came to operation. Too, there has developed a group of outstanding men who champion the cause of very early surgical intervention in the acute forms of this disease. The subject encompasses so much that some very important and interesting data must of necessity be omitted in a paper of this kind.

The indications and contraindications for gallbladder surgery naturally resolve themselves into (a) those cases to be treated by operation and (b) those to be treated medically.

INDICATIONS FOR SURGERY

1. Acute cholecystitis.
2. Chronic cholecystitis, with calculi.
3. Chronic cholecystitis—non-calculous, a very select group.
4. Obstructive lesions in the biliary tract.

The most common and severe forms of acute cholecystitis are those which are associated with stone. Gage of Tulane writes that acute cholecystitis is precipitated by gallstones in from eighty-five to ninety per cent of the cases. Baumgartner reported a series of cases of acute cholecystitis of which ninety-six per cent were associated with stone. Judd and Phillips gave a similar report in their series of five hundred-eight cases of acute cholecystitis in which four hundred eighty-four had stones in the gallbladder. Most pathologists agree now that mechanical obstruction of the cystic duct by stone is responsible for acute cholecystitis and that infection when present is almost

always secondary, depending on obstruction for its development. In most cases of acute cholecystitis there is a history of previous attacks of gallstone colic extending over a period of years. Violent upper abdominal pain, vomiting, chills and fever, and abdominal distention are the usual first symptoms. The pain is very intense and may begin in the epigastrium but later shifts to the right upper quadrant. It often radiates to the back and right shoulder. Muscular tenderness, rigidity, fever, rapid pulse, and a leukocytosis signal a progression of the disease. The gallbladder may become so distended as to be palpable—this occurring in about twenty per cent of the cases. Jaundice may or may not be present. The majority of these cases will subside under conservative treatment, and can be operated upon during a quiescent period when conditions are more favorable. On the other hand, some cases do not subside, and the inflammation rapidly progresses to empyema, gangrene and perforation.

It is impossible for a surgeon to predict accurately the extent of the lesion in acute cholecystitis. Cholecystography, so useful in the diagnosis of other types of gallbladder disease, cannot be used for fear of liver irritation. Walters and Snell of the Mayo Clinic, in their magnificent book on Cholecystic Disease, state that the absence of any constant relation between the severity of symptoms and the seriousness of pathologic findings makes an anatomically accurate diagnosis difficult, if not impossible. Advanced grades of inflammation may exist in the presence of minimal clinical signs and symptoms; it is equally true that rather striking acute symptoms may be produced by relatively minor lesions in the gallbladder.

In acute cholecystitis, operation is definitely indicated. Whether the operation is performed immediately, early, or delayed is a matter of individual choice or judgment. Empyema, gangrene and perforation of the gallbladder require prompt operation. The so-called immediate operation in acute cholecystitis, as advocated by Heuer, means operating within forty-eight hours after onset of symptoms; the early operation, within three to five days after beginning of the attack; and the delayed, two or three weeks, perhaps several months. A resume' of cur-

*Read before the Association in annual session, Mobile, April 16, 1941.

rent thought on this subject is interesting and shows a wide divergence of opinion. Dr. George Stobie, writing in the *Canadian Medical Journal*, advocates operation within the first three days. He does say, however, that a questionnaire sent to the teachers in the seven Canadian medical schools states that delayed treatment is practiced by the majority, and is taught as the method of choice. Hotz of the New York Post-Graduate Hospital, and Glenn and Heuer of New York Hospital are all advocates of the immediate operation. Dr. Pennoyer of Roosevelt Hospital, New York City, believes in the delayed operation. Walters of the Mayo Clinic feels that early surgery is best; while Bergh at the Surgical Clinic, University of Minnesota follows the plan of the conservative, or delayed method of treatment. At the Peter Bent Brigham Hospital at Boston there is no set rule for operating on cases of acute cholecystitis; each case is individualized and operation performed as indications warrant. Whether cholecystectomy or cholecystostomy should be done is left to the judgment of the surgeon and the particular pathology found at operation.

The most satisfactory results in the surgical treatment of cholecystic disease are obtained in cases operated upon for chronic cholecystitis with stones. The cardinal symptom of this condition is biliary colic. There is excruciating pain in the right upper quadrant, usually requiring morphine for relief. It is agreed that the pain is produced by contraction of the gallbladder on its contents or by the gallbladder contracting against the back pressure offered by the sphincteric mechanism in the neck of the gallbladder, or at the end of the cystic duct. Zollinger, after some very interesting experiments, concluded that biliary colic is a true visceral pain, and that referred pain to the scapula is attributable to inflammation and to the setting up of a peritoneal cutaneous reflex. Belching, nausea and vomiting accompany the pain. Tenderness, residual soreness, and some fever follow an attack. The patient complains of gaseous indigestion, sour eructations, and distention following a full meal, and heaviness in the epigastrium. There is a tendency to remissions and exacerbations of the symptoms.

Cholecystography with its high percentage of accuracy furnishes the positive evidence

of stones, and no case of chronic cholecystitis should be subjected to surgery without a thorough cholecystographic examination. The finding of a stone, or stones, is a clear-cut indication for operation. Mahorner of New Orleans writes that permitting the gallbladder to remain with stones is inviting further complications, such as obstructive jaundice, pancreatitis, etc. Concerning this, Cheever of Boston says, "There is no such thing as harmless gallstones. The removal of the gallbladder is attended by a low mortality and morbidity, and its absence causes no evident harm to the physical welfare of the individual." Kruse, Clinical Professor of Medicine of the University of California, feels that multiple or single stones in the gallbladder are an indication for surgery.

Much has been said of the single stone producing no symptoms. This is the so-called silent stone. Many believe these cases should be left alone until they produce trouble. However, the possibility of obstruction to the neck of the gallbladder with resulting gangrene and perforation, and also the danger of an ever-present focus of infection, place this type of case with those deserving surgery.

Since the presence of stones is ample evidence in itself of a coexisting cholecystitis—and a forerunner of serious obstructive lesions of the biliary tract, pancreatitis, and cancer—it is apparent that early surgery is indicated.

In chronic non-calculous cholecystitis surgeons and internists alike have found one of their most perplexing problems. Certain forms of this condition may represent the early stages of more chronic and serious disturbances of the gallbladder which may eventually lead to stone formation. Operations in this group of cases are frequently followed by poor results and it is well known that the outlook for a complete symptomatic cure after cholecystectomy is definitely less favorable than in cases where stones are present. Graham puts the unsatisfactory results from cholecystectomy in non-calculous cholecystic disease at forty per cent. Judd of the Mayo Clinic stated that no one actually knew what constituted chronic cholecystitis, either from the standpoint of clinical symptoms or from that of pathologic findings. It has also been said that cholecystitis without stone seems to belong to a

region on the borderline between functional and organic disease. The great number of patients who return to the internist unrelieved after operation is ample evidence that surgery of non-calculous gallbladder disease is indicated in only very select cases.

Pathologically two types of non-calculous cholecystitis will be considered. The first is the chronic inflammatory type of gallbladder which shows definite edematous and thickened walls and an opaque serous coat. The second type, known as the strawberry gallbladder, is a result of metabolic cholecystic disease and its characteristic appearance is due to deposits of cholesterol esters which stud the gallbladder mucosa. Many of these contain stones. However, in those cases without stones very little pathologic change is found.

The most constant symptom of either type of non-calculous cholecystitis is recurrent flatulent dyspepsia, pain and aching discomfort in the epigastrium or right upper quadrant of the abdomen. Bloating after a full meal and distention are common complaints. The dyspepsia is aggravated by fried or greasy foods, roughage, coffee, or certain highly seasoned foods. Classical biliary colic is infrequent. Physical findings are of very little value. The character of the pain, its distribution, the time of occurrence, and the circumstances under which it develops are the best aids to an accurate diagnosis. Cholecystography is helpful but the percentage of accuracy in these cases is somewhat disappointing. The cholecystogram showing definite and unmistakable evidence of a non-functioning gallbladder is not the usual finding in this type of gallbladder disease. The difficulties in making a positive diagnosis have caused attention to be focused on duodenal biliary drainage. The findings of epithelial cells, excess leukocytes, quantities of mucus and pus, or the absence of B bile in the duodenal content are regarded as important by some investigators.

In non-calculous cholecystitis, a definite history of flatulent indigestion, localized pain and tenderness in the right upper quadrant, a cholecystogram showing a non-functioning gallbladder, a lack of improvement under prolonged medical care, and the exclusion of conditions that simulate cholecystitis would indicate that surgery is necessary.

In obstructive lesions of the biliary tract, such as malignancies of the pancreas, the common duct or ampulla of Vater, and strictures, there is a limited field in which gallbladder surgery is of value. In these conditions an anastomosis is made between the gallbladder and the stomach or duodenum thus short circuiting the flow of bile around the obstruction. Oppenheimer, Glass and Netter of New York report thirty-four cases operated upon for jaundice. There was a slowly increasing, painless obstructive jaundice with pruritus, weakness and loss of weight. Thirty of these cases at operation showed carcinoma of the head of the pancreas.

CONTRAINDICATIONS TO GALLBLADDER SURGERY

1. Gallbladder dyskinesia.
2. Chronic cholecystitis, non-calculous.
3. Neurasthenic cases with signs of cholecystitis, but who have not had biliary colic.
4. Poor risk cases because of cardiovascular, or renal disease.

The borderline where medical treatment ends and surgical treatment begins is less easily defined in gallbladder pathology than in diseases elsewhere. It is also very difficult to differentiate between true organic gallbladder disease and functional gallbladder conditions. The biliary dyskinesias, according to Walters and Snell, comprise a syndrome group of functional disturbances of the gallbladder. These cases can present all the symptoms of true cholecystic disease without evidence of infection or cholesterosis. Due to this functional disorder, stasis of the gallbladder occurs. There may be motor inactivity of the gallbladder, reversed duodenal peristalsis, or spasm of the sphincter of Oddi. These cases should not be subjected to operation. They are best treated medically, and even under most vigilant care a number will show very little improvement.

The cases of non-calculous gallbladder disease showing poor function on the cholecystogram, with only a vague history of definite biliary colic and making satisfactory progress under medical treatment, should not be treated surgically. Conditions of the gallbladder due to perverted cholesterol metabolism are surgical only when stones are present.

A definite group of neurasthenic patients with chronic cholecystitis is a special treat-

ment problem. They are not good surgical risks, the confused array of symptoms presented is difficult to evaluate, and, lastly, their complaints are not relieved by operation.

The question of the poor risk patient arises. Is the immediate condition of the gallbladder more serious to life than the hazard of a major surgical procedure? Cases of cardiovascular or renal disease and other serious physical disorders would contraindicate surgery. This question, just as all questions pertaining to cholecystic disease, necessitates an individualization of each case and an individual application of judgment to solve its problem.

SUMMARY

1. Some of the more important indications and contraindications for surgery of the gallbladder have been stated.

2. The terms immediate, early, and delayed operation for acute cholecystitis have been clarified.

3. The best surgical results are obtained in gallbladder disease associated with stones; the poorest results from those unassociated with stone.

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The Usefulness of Medicine—The usefulness of medicine in this country at this, perhaps the most critical and crucial time of all history, depends entirely on the judgment and mental attitude of the American public. The medical profession demonstrably stands ready to serve, serve to the limit and without hope of fee or reward. The public neither understands nor appreciates this attitude. It is certain that the American public does not know enough about the knowledge and skill of scientific medicine to make a fair, comprehensive comparison between scientific and pseudo-scientific medicine. It makes a big difference. There are those who have gone off after false gods in the field of medicine, led astray by false leadership and specious argument. It is difficult for the medical profession to do anything about that. The doctors have stood on the watchtower through these many years, trying to reason with their people about such matters, and they apparently have gotten exactly nowhere with it. Of course, some information thus given out has been absorbed, and no doubt much good will be accomplished thereby, but there is so much yet to be done, and so few avenues of approach, and so much unwillingness to listen and indisposition to heed, and so few of us willing to do the preaching, that the situation immediately becomes rather discouraging.

After all, it is to the advantage of the consumer rather than the producer that medical service be of the highly scientific sort and skillfully administered. It is not so difficult to prove medicine, once the opportunity of doing so is presented. The difficulty lies in finding the opportunity.—*Hunt, Texas State J. Med., June '41.*

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SULFAPYRIDINE AND SULFATHIAZOLE

"In an attempt to evaluate the comparative therapeutic effectiveness and toxicity of sulfapyridine and sulfathiazole, pneumonia patients admitted to the medical services at the Philadelphia General Hospital were divided into therapeutic groups so that approximately an equal number received sulfapyridine and sulfathiazole. This report deals with the study of 400 adult patients, the first 200 consecutively typed pneumococcal pneumonia patients from each therapeutic group." Thus do Flippin, Reinhold and Schwartz¹ open their recently published inquiry into the relative merits and demerits of these two new drugs.

The Philadelphia investigators conclude in part that "in our experience thus far, sulfapyridine and sulfathiazole both appeared to be effective therapeutic agents in the treatment of pneumococcal pneumonia as based on final mortality. Clinical response, as evidenced by a fall in temperature, was somewhat more striking with sulfapyridine than with sulfathiazole, although this apparent advantage had no effect on the incidence of complications and on the duration of hospitalization. . . ."

1. Flippin, Harrison F.; Reinhold, John G., and Schwartz, Leon: Sulfapyridine and Sulfathiazole in Pneumococcal Pneumonia, J. A. M. A. 116: 683 (Feb. 22) 1941.

"In general, the more toxic reactions, such as serious renal involvement, blood dyscrasias and dermatitis, have been infrequent and comparable in both therapeutic groups. The hazard of severe toxic reactions increases with the prolonged use of these drugs and their use in cases of chronic organic disease complicating the acute infectious process. In the treatment of pneumonia most patients required no more than from 25 to 30 gm. of either drug extending over a period approximating five days. We believe that this explains in part the low incidence of serious toxicity. Adequate fluid intake and the administration of alkalis are important adjuvants. It is desirable, in order to facilitate excretion of these compounds by the kidneys, to maintain a urinary output in excess of 1,000 cc. daily."

"A most troublesome and often distressing toxic effect of both sulfapyridine and sulfathiazole has been nausea and vomiting. However, vomiting has been definitely less frequent and severe in the patients treated with sulfathiazole. From the clinical point of view, this advantage is of decided importance in the management of pneumonia patients."

And "the incidence of complications was low and comparable in the two therapeutic groups."

Only in a great medical center could such a wealth of clinical material be so carefully studied and the effects of two drugs so accurately checked and compared, and Flippin and his co-workers are to be congratulated for a fine and highly practical study. For it is by such thorough and accurate work as this that our knowledge is extended and clarified. Much more will doubtless be learned about this group of highly potent and dangerous drugs, and other derivatives, more effective and less toxic, will probably appear in due course. But, meanwhile, practitioners will do well to keep in mind the findings of Flippin, Reinhold and Schwartz.

Tuberculosis Control—It is essential that the public have some knowledge of fundamental facts concerning the cause, mode of spread, nature of the disease, treatment and prevention if tuberculosis is to be controlled. No medical and hospital facilities can render effective service if reasonably well informed support of the public is lacking.—Gass, J. Tennessee M. A., June '41.

THE CLEVELAND MEETING OF THE AMERICAN MEDICAL ASSOCIATION

Viewed in retrospect, the 92nd session of the American Medical Association held in the City of Cleveland June 2-6 was one of the most successful in the long history of this organisation. In numbers well attended, with a total registration of 7,269; in hotel accommodations, auditorium and exhibit space, as well as in commodious quarters for sectional meetings and public entertainment ranking high; and in cordiality and hospitality and with a most efficient committee on entertainment and a capable staff of press reporters—all of these factors combined to make this meeting one of exceptional interest and value.

The exhibits, both scientific and commercial, always interesting and instructive and covering almost every conceivable subject, seemed this year to be fuller and richer than ever and proved a never-ending source of attraction to thousands in quest of the newest and best in the ever-widening field of scientific medicine.

As might be expected, the impelling topic for consideration and discussion in public gatherings, in the House of Delegates and in section meetings was the manifold medical aspects of the Nation's defense program. Particularly in the House of Delegates were these questions seriously debated and the many concrete suggestions made to this body by the Association's officers, committees and councils were carefully reviewed and acted upon; at every point was manifest the patriotic desire to place at the Nation's disposal the needed medical man-power as well as the invaluable detailed data accumulated in the general offices of the American Medical Association through its Committee on Medical Preparedness, which, if fully and properly used, should provide a means for the intelligent assignment of medical personnel to serve the military and the civilian population alike. The House gave approval to a resolution requesting that a suitable agency be set up by the Federal Government to make selections of medical personnel based upon the information available through the channels of organised medicine, with the thought of relieving county medical societies of making such decisions, as was contemplated by the most recent set of questionnaires sent to county medical societies.

It was heartening indeed to learn of the ready response made by state medical associations throughout the entire country not only in this rather difficult matter of questionnaires, but also in the fine type of co-operation given by the profession to the draft boards at the several levels where medical counsel is so important. One could not sit through the deliberations of this body without sensing that spirit of patriotism which has ever characterised the profession in time of crisis. The women physicians of the country—now numbering some 8,000 and having in the House a delegate from New York state—sought approval by the House for contemplated legislation to grant to women physicians a commissioned status in the Army and Navy, pointing out that their patriotism was certainly no less than that of the Army nurse who now enjoys all the privileges and benefits granted commissioned officers. After medical officers from the Surgeon General of the Army's staff pointed out the difficulties inherent in making provision for the proper quartering of the female physician with the armed forces, the House reluctantly declined to give approval to this plea.

In executive session on Tuesday afternoon, the Association's principal attorney, Mr. Burke, briefly and interestingly reviewed the trial proceedings against the Association which had recently been heard in Washington. As is known, the outcome of this trial was adverse both to the American Medical Association and to the District of Columbia Medical Society, with a fine being imposed upon each. It being the feeling both of Mr. Burke and of the Board of Trustees that the case should be appealed and carried through the courts to final decision, the House of Delegates gave approval to this course of action.

One of the most interesting, and quite likely most significant, happenings in the House of Delegates was the attitude revealed by the "general practitioner" group, requesting that a special section be created within the American Medical Association to better care for the specific needs of this important and large group and also that attention be given to the possibility of establishing a specialty board for the general practitioner along lines similar to the numerous other specialty boards now in existence. Apparently, the

prodigiously rapid growth of these specialty boards in quite recent years has created, at least in some sections of our country, a feeling of insecurity or of isolationism amongst those important elements of the profession known as "general practitioners," and constituting, as we all do well know, the "first line of defense" in medicine. In order to obviate future unwholesome possibilities arising from this source within the American Medical Association, the Council on Medical Education and Hospitals was requested to render the necessary leadership and aid for the accomplishment, by all specialty boards, of the high purposes for which they were originally created, as well as to curb, where indicated, any semblance of self-aggrandisement which might savour of a monopolistic guild. The House of Delegates voted, for purposes of trial and experimentation, to authorise for the next annual meeting the holding of a section on general practice, final decision on this matter to await the outcome of such experiment. No definite action was taken in the matter of creating a specialty board for general practitioners, for the reason that the implications and difficulties here encountered are not so simple, and should receive further careful study.

In order to still further promote the "good-neighbor" relationship now being fostered in the Western Hemisphere, it was voted to make the next annual session of the American Medical Association, to be held in Atlantic City in 1942, a Pan-American one and particularly to encourage attendance on the part of our South American sister republics.

The 1943 session will be held in San Francisco, California, and the 1944 session in St. Louis, Missouri. Dr. Fred W. Rankin, of Lexington, Kentucky, was unanimously elected President-Elect and Dr. Charles A. Dukes, of Oakland, California, Vice-President. Dr. Ernest E. Irons, of Chicago, and Dr. Charles W. Roberts, of Atlanta, were elected to the two vacancies on the Board of Trustees.

Other interesting items, a discussion of which cannot here be entered into, claimed the attention of the House of Delegates. These are covered in the detailed report of the Proceedings of the House of Delegates, appearing in the Journal of the American

Medical Association and should be carefully followed by all interested members.

Committee Contributions

Maternal and Infant Welfare

MATERNAL DEATHS

Of the four chief causes of maternal deaths in Alabama, namely, sepsis, hemorrhage, abortion, and toxemia, the last named was the cause of the second greatest number of deaths in 1939. One hundred and thirteen mothers sacrificed their lives to all toxemias of pregnancy which are to a great extent preventable.

Experience in large clinic centers has clearly demonstrated that the answer to the problem of convulsive eclampsia lies largely in its prevention and control by intelligent prenatal care. Where this has been carried out, the occurrence of eclamptic convulsions has become almost a medical curiosity and the death rate has been greatly reduced. As diet and rest can play so large a factor in the control, there is no reason why every patient should not have the benefits of prenatal care. It is also evident that when a toxemia becomes progressively worse despite these measures, much can be done if the patient is in the care of a competent physician. Studies a few years ago indicated that approximately 70 per cent of all women in Alabama dying from puerperal causes had not had the benefit of prenatal care. Although there are a number of other reasons why adequate care is essential during this period, the recognition and control of toxemia are probably the most important.

Prevention of Cancer

CANCER OF THE COLON

Cancer of the cecum and ascending colon is usually considered separately from that of the transverse and descending colon because the symptoms differ somewhat in the two although they have many features in common. In both, the early stages are usually marked by rather vague symptoms but in the lower portion of the bowel symptoms of alternating diarrhea and constipation tend to appear rather early, chiefly due to the dif-

ference in the consistency of the bowel content. In malignancies of the cecum and ascending colon the early symptoms may be mistaken for appendicitis, and it is not unusual for an appendectomy to have been performed shortly prior to the establishment of the presence of a carcinoma.

The carcinomas of this portion of the gastro-intestinal tract are susceptible of early diagnosis only if the physician continues to keep the possibility of their occurrence in mind and then makes frequent use of the x-ray to confirm or rule out their presence. Although results vary somewhat with the lo-

cation of the carcinoma, a very definite percentage of five-year survivals occur, it being considerably higher than most other neoplasms in the gastro-intestinal tract. The technical problems of the resection of a portion of the colon are great and call for the exercise of considerable surgical judgment as well as skill.

For a more extensive and concise review of this subject, the reader is referred to the "Blue Book" or Cancer Manual, copies of which have been furnished the physicians of Alabama.

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

SPECIMENS EXAMINED

MARCH 1941

Examinations for diphtheria bacilli and Vincent's	625
Agglutination tests (typhoid, Brill's, undulant fever, etc.)	558
Typhoid cultures (blood, feces and urine) ..	735
Examinations for malaria	1,184
Examinations for intestinal parasites	6,114
Serologic tests for syphilis (blood and spinal fluid)	36,924
Darkfield examinations	46
Examinations for gonococci	2,200
Examinations for tubercle bacilli	1,887
Examinations for Negri bodies (microscopic)	42
Water examinations (bacteriologic)	916
Milk examinations	2,131
Pneumococcus typing	55
Miscellaneous	863
Total 54,280	

GASTRO-ENTERITIS FROM CREAM-FILLED PASTRIES

Outbreaks of food poisoning attributable to the consumption of cream-filled pastries are being reported all too frequently in the literature. The frequent occurrence of such outbreaks is in itself proof that bakers and consumers, or both, have no real appreciation of the precautions that should be observed in the preparation, handling and storage of such bakery products.

The custard used in cream-filled pastries provides an excellent medium for the growth of many species of bacteria. To pre-

vent the growth of such organisms the custard filling should be promptly used after its preparation and should not be held for any length of time before the shells are filled. After being filled the shells should be immediately refrigerated and should be kept refrigerated until consumed. The practice of displaying pastries on counters in bakeries and restaurants should be discouraged as it affords opportunity for multiplication of contaminating bacteria.

Some reduction in the incidence of the poisonings induced by the enterotoxins of staphylococci in such foods might be anticipated if bakers adopted the procedure of rebaking their custard-filled products. Ample evidence is available to show that enterotoxin producing strains of staphylococci in custard filled eclair shells are killed by baking for 15 minutes at 420-428° F. Experimentally rebaked eclairs and cream-filled pies were not impaired in their appearance or palatability by exposure to 420° F. for 20 minutes. Such rebaking does not destroy toxin already formed in the filling and is of value, therefore, only if the filling has been properly handled prior to being placed in the pastry shells and if the pastry is promptly rebaked after being filled.

Bakers should call attention to the fact that cream-filled pastries are perishable, should be consumed promptly and should be kept refrigerated until served. Some bakers are already doing this either by printing notices on the containers or by distributing a circular to this effect with each sale of cream-filled pastry.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

INDUSTRIAL HYGIENE ACTIVITIES

The Division of Industrial Hygiene is a relatively recent addition to the staff of the State Health Department but it has been accomplishing a great deal in its chosen field. Before embarking on a program of specific corrections it was necessary to know the industries of the State, their working conditions, products and by-products and the hazards associated with each.

Obviously this was a big undertaking and could not be carried out with the limited staff of the division alone. A WPA project, however, was submitted and approved on an experimental basis. This project began operations in July of 1940 and closed in June of 1941. Jefferson County with its mass of diversified industries was the logical center of operations and most of the survey work was carried out there. A total of 1,238 industries were studied ranging from very small ones to some of considerable size; all told, 41,986 workers were employed in these plants.

In each plant surveyed information was assembled not only as to the physical structure of the plant and its general hygienic conditions but also as to the materials used and the finished product. There are over 500 materials which are known to be injurious under certain conditions so each occupation in each plant was listed as to its potential dangers. At the same time measures which were in use to correct and control these hazards were noted.

Further study, particularly as to chemical by-products which may occur in the course of manufacture or as to the amount of dust and its composition, must be carried out in individual plants. For the first time, however, a cross-section of the health hazards in the industries of Alabama is available.

Gonorrhea—The diagnosis of gonorrhea in the female has always been considered a problem chiefly because of the tendency of the disease to become chronic. Although some patients do present themselves voluntarily because of a discharge, burning on urination, pain due to Bartholin abscess, or pain from a salpingitis, a great majority of our female gonorrhea is found in contacts to known cases of gonorrhea, who therefore are requested to come in for examination.—*Sewell, et al., Am. J. Pub. Health, May '41.*

BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

DIARRHEA AND ENTERITIS

This problem is closely linked with sanitation and cleanliness. The seasonal incidence is largely due to the fact that during the summer bacteria grow much more rapidly than during colder weather. Most foods, especially milk, make excellent culture media, unless properly refrigerated. In some areas of the United States where economic and sanitary conditions are much better than they are in Alabama the seasonal incidence of the disease has disappeared.

We have made great progress in the treatment of this problem in the last two or three years. Sulfanilamide is very good in parenteral diarrhea in which the primary infection is due to a streptococcus. However, the best results have been obtained with either sulfapyridine or sulfathiazole. Usually sulfathiazole is preferable because of the lesser incidence of vomiting. The dosage of these drugs is three-fourths to one and-half grains per pound per day depending upon the age of the child and the severity of the infection.

These drugs are very effective; however, supportive treatment to combat the fluid depletion and the acidosis must be instituted. Small transfusions of 50 to 100 cc. are often-times life saving in the more severe cases. Hartman's solution with 3% glucose is probably the fluid of choice. This very effectively combats the acidosis in addition to supplying much needed nutrition and fluid. It has the added advantage of being a buffer salt and can be given by hypodermoclysis as well as intravenously. Other fluids, such as normal saline and 5% glucose, can also be given. Glucose should never be administered intraperitoneally and only the very dilute solutions by hypodermoclysis. Continuous intravenous drip of saline, Hartman's solution, or glucose is sometimes life saving. These fluids are usually given at the rate of 16 to 18 drops per minute. In some children the fluid balance has been upset so badly that the fluid seems to pass right through the child and he remains dehydrated in spite of adequate fluids being given by vein. The tissues of these children just do not seem to take up the fluid. In these children very good results have been obtained with 10% solution of calcium gluconate. The

usual procedure is to give 10 cc. and repeat the dose in 6 to 8 hours if necessary. In giving intravenous fluids one must be careful and not give too much. When edema of the tissues begins to appear the fluids should be discontinued.

In regard to the diet, all fats should be eliminated. If one sees the child early, a starvation period of from twelve to twenty-four hours is of value. However, if the child has been sick for two or three days it does not seem to be of much value. The diet will not be discussed further because there is great disagreement on this point and almost everyone who has written on this subject has his own favorite diet.

A mild laxative, such as milk of magnesia, is indicated if the patient is seen less than twenty-four hours after onset. After twenty-four hours it is doubtful if any laxative is of value and it may do much harm. Most authorities agree that drastic purgatives, such as calomel and castor oil, are seldom if ever indicated in the treatment of diarrhea and enteritis.

In the April issue of the Journal of Pediatrics there is a very good short article on "Sulfathiazole Therapy of Infantile Diarrhea" by Grant Taylor of Duke University. Stools returned to normal in the treated cases in 3.2 days, while in the controls it took an average of 15.6 days. In the thirteen treated cases no deaths occurred whereas two deaths occurred in the fourteen control cases. This is only one of many articles in the pediatric literature attesting the value of sulfapyridine and sulfathiazole in the treatment of infantile diarrhea.

J. S. S.

BUREAU OF SANITATION

IMPOUNDING OF WATERS

REVISED BULLETIN CONTAINING REGULATIONS

The bulletin, which was originally printed in 1927, containing the Regulations Governing the Impounding of Waters has been revised recently. The bulletin is divided into three general sections: namely, (1) purpose of the regulations, (2) Regulations Governing the Impounding of Waters, and (3) explanation and interpretation of the regulations.

Purpose of the Regulations: The construction of artificial lakes creates a potential malaria hazard. This fact prompted the State Board of Health to adopt regulations in 1927 governing their construction and maintenance. The purpose of the regulations is to prevent the spread of malaria among people living within the zone of transmission around any artificially created lake. These regulations are based upon state laws now on the statute books and are for the purpose of protecting the health and welfare of the people. The construction of a dam and the subsequent impoundment of water is a radical change in land use. Unless an impoundage is properly constructed and maintained, conditions are created which provide a favorable breeding place for a particular type mosquito, namely, the *Anopheles quadrimaculatus*, the malaria-transmitting mosquito of the Southeastern United States. If these mosquitoes could be confined to the owner's premises after being produced, the principal concern of the State Department of Health would be to call the owner's attention to his self-created hazard. Such, however, is not the case as this mosquito will fly approximately one mile from its breeding place. In this mile circle there may live many people who own their land or rent from others. If the malaria-transmitting mosquitoes are not confined to the owner's premises, then the State Department of Health becomes vitally interested as the owner has created conditions which affect the health of the people of the State. It is the duty of this department, within its limitations, to protect the health of not only the pond owner but also of those in the vicinity of such a pond whose health might become impaired.

Regulations Governing the Impounding of Waters: There has been no change in the regulations which were originally adopted on February 28, 1927.

Explanation and Interpretation of the Regulations: A detailed explanation of each section of the regulations is given in as non-technical terms as possible. Experience during the past fourteen years with the regulations has shown that certain modifications can be made without increasing the possibility of mosquito production. These modifications are given in the explanation.

J. C. C.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1941		Estimated Expectancy May
	April	May	
Typhoid	2	5	22
Typhus	10	16	15
Malaria	56	263	262
Smallpox	0	0	5
Measles	2964	1946	431
Scarlet fever	53	81	27
Whooping cough	252	339	191
Diphtheria	27	24	32
Influenza	433	180	154
Mumps	647	516	139
Poliomyelitis	2	2	1
Encephalitis	3	0	3
Chickenpox	219	98	128
Tetanus	1	3	3
Tuberculosis	326	328	281
Pellagra	13	31	55
Meningitis	7	5	7
Pneumonia	339	287	254
Ophthalmia neonatorum	3	1	2
Trachoma	0	0	0
Tularemia	2	5	3
Undulant fever	2	3	4
Dengue	0	0	0
Amebic dysentery	0	1	0
Cancer	114	152	0
Rabies—Human cases	0	0	0
Positive animal heads	18	16	---

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

Woman's Auxiliary

Mrs. F. C. Smith, Chairman
Press and Publicity Committee

Address by Mrs. J. R. Horn, President of the
Auxiliary to the Association Given at
Mobile, April 16, 1941

Madam Chairman and Friends:

I deeply appreciate the honor you have bestowed upon me in choosing me your President. I sincerely thank you for the opportunity it affords me to be of service. The tradition of this organization for loyal cooperation gives me a feeling of confidence which, in spite of my sense of inadequacy, enables me to accept the responsibilities which the office embraces. I would especially like to thank Mrs. Davie for the patient and gracious manner in which she has passed on to me some of the fruits of her judgment and experience; her wonderful accomplishments have been a constant inspiration. I am singularly blessed in being able to succeed her.

During the coming year let us live up to the aims of the national Auxiliary, as outlined by Mrs. Holcombe in her inaugural address, which are, first, to interpret the aims

of the medical profession to other organizations interested in the promotion of health education; second, to assist in the entertainment at the sessions of the American Medical Association; third, to encourage friendliness among the families of the medical profession; and fourth, to do work approved by the advisory council of the American Medical Association.

Let us subscribe for and read *The Bulletin*; and read *Hygeia* since we cannot sell a product with which we are not familiar. After all it is the only propaganda magazine of the American Medical Association. We cannot afford to miss the *Alabama Medical Journal* which, thanks to Mrs. Davie and Mrs. Smith, has a chatty and informative section in every issue.

The Auxiliary to the Southern Medical Association asks that we remember only three colorful projects: Doctor's Day, the Jane Todd Crawford Memorial, and research in the romance of medicine.

In the state we were originally organized to assist in entertaining at conventions but we have outgrown this and have become helpmates in many phases of state medical activities. Remember the words of Countess Suttner: "After the verb to love, to help is the most beautiful verb in the world." We hope to increase our helpfulness.

Whether a doctor's wife is a member of a constituted auxiliary she has her part to play. As Thomas Mann so aptly expressed it in the *Magic Mountain*, "Man not only lives his personal life as an individual but consciously or unconsciously the life of his epoch and contemporaries." This is certainly true of a doctor's family. A constituted auxiliary in every medical unit in America would go far toward meeting the threats to the medical profession today.

By putting our hearts in it and our minds to it, the revised Handbook motto will become a reality: "To build on the foundations of yesterday with the tools of today—the better medical world of tomorrow can become our achievement."

Again let me thank you and assure you that I shall always try to justify your confidence.

NEXT ANNUAL MEETING
OF THE ASSOCIATION
MONTGOMERY
APRIL 14-16, 1942

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

Summer meeting of the Southwestern Division of the Association will be held in Thomasville, July 16, with Vice-President Dr. J. Paul Jones of Camden in charge and the Clarke County Medical Society as host.

Essayists are to be Drs. Julian Graubarth, New Orleans, "Immunization Problems and Use of the Newer Drugs in Pediatrics"; H. R. Cogburn, Mobile, "Common Skin Diseases"; Gilbert Douglas, Birmingham, "Uterine Bleeding: Our Problem"; and John A. Martin, Montgomery, "Gastro-Intestinal Conditions Affecting the Pylorus."

* * *

The Northwestern Division of the Association, which met in Moulton on June 26th, was addressed by Drs. E. V. Caldwell, Huntsville, "Stones in the Common Duct and Their Treatment"; H. M. Simpson, Florence, "Acute Indigestion"; A. M. Roan, Decatur, "The Acute Abdomen"; A. L. Glaze, Birmingham, "Prophylactic Treatment of Acne Vulgaris"; and W. Nicholson Jones, Birmingham, "Cancer of the Female Reproductive Organs."

* * *

The Jefferson County Medical Society will hold its annual postgraduate seminar in Birmingham, September 15 and 16. Outstanding men in various branches of medicine will address the assembly.

Annual meeting of the Alabama Pediatric Society will occupy the succeeding day, September 17th.

* * *

Dr. Norman Van Wezel, formerly Director of the Montgomery Tuberculosis Sanatorium, announces the opening of his office at 17 Adams Avenue, Montgomery, with practice limited to tuberculosis and diseases of the chest.

* * *

After twenty-nine years of continuous service, Dr. J. E. Garrison has resigned as chief of staff and chief of the obstetric and gynecologic departments of the Salvation Army Maternity Hospital, Birmingham. He has been succeeded by Dr. C. D. Gaines, Ensley, as obstetrician, and Dr. Gilbert Douglas, Birmingham, gynecologist.

The Cardiovascular Department of Michael Reese Hospital, Chicago, announces a full-time intensive course in electrocardiography, August 18-30, under the direction of Dr. Louis N. Katz.

* * *

Specialists eligible for listing in the forthcoming second edition of the Directory of Medical Specialists are urged to fill in and return promptly the questionnaires for biographic data now being mailed out by the publication office.

This directory is the official publication of the Advisory Board for Medical Specialties, issued every two years, and listings are limited to those formally certified by any of the fifteen American boards examining in the medical specialties. There is no charge for such listings.

The second edition is now being prepared, and will be ready for distribution early in February 1942, with biographic, geographic, and alphabetic listings of all diplomates certified to January 1, 1942. It will include approximately 18,000 names.

The directing editor is Paul Titus, M. D., 1015 Highland Building, Pittsburgh, Pennsylvania, and the secretaries of the fifteen American boards constitute the editorial board.

* * *

The 20th annual scientific and clinical session of the American Congress of Physical Therapy will be held September 1 to 5 inclusive, 1941, at The Mayflower, Washington, D. C.

The mornings will be devoted to the annual instruction course, and the afternoons and evenings will be devoted to the scientific and clinical sessions. The seminar and convention proper will be open to all physicians and qualified technicians.

All the phases of physical medicine will be covered in the general program, including a special symposium on poliomyelitis. The program will be of interest to the general practitioner as well as to the specialist in physical therapy.

For information concerning the seminar and preliminary program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

At the same time the 25th annual meeting of the American Occupational Therapy As-

sociation will be held at The Mayflower. A combined meeting will be held on Wednesday, September 3, 1941. For information concerning the Occupational Therapy Association meeting, address Mrs. Meta R. Cobb, 175 Fifth Avenue, New York City.

Book Abstracts and Reviews

McLeod's Physiology in Modern Medicine. Edited by Philip Bard, Professor of Physiology, Johns Hopkins University School of Medicine; with the collaboration of Henry C. Bazett, Professor of Physiology, University of Pennsylvania; George R. Cowgill, Associate Professor of Physiological Chemistry, Yale University School of Medicine; Howard J. Curtis, Instructor in Physiology, Johns Hopkins University School of Medicine; Harry Eagle, Passed Assistant Surgeon, United States Public Health Service and Lecturer in Medicine, Johns Hopkins University School of Medicine; Chalmers L. Gemmill, Associate in Physiology, Johns Hopkins University School of Medicine; Magnus I. Gregersen, Professor of Physiology, College of Physicians and Surgeons, Columbia University; Roy G. Hoskins, Director of Research, Memorial Foundation for Neuro-Endocrine Research, Associate in Physiology, Harvard Medical School; J. M. D. Olmstead, Professor of Physiology, University of California; Carl F. Schmidt, Professor of Pharmacology, University of Pennsylvania. Ninth edition. Cloth. Price, \$10.00. Pp. 1,256, with 387 illustrations. St. Louis: The C. V. Mosby Company, 1941.

The last two editions of McLeod's Physiology edited by Bard have been the work of many individual contributors, each of whom is an authority in his field. Such an arrangement has the advantage of maximum detail but is a distinct handicap in not giving each fact its relative importance.

In the ninth edition much material has been deleted, many chapters have been expanded, and many have been entirely rewritten. Several new chapters have been added.

Unlike Wright's book, this is not really an applied physiology, but rather a volume written primarily for the physiologist. As a textbook of physiology or reference volume it has great value, although many medical students and practitioners of medicine would prefer the more practical applied physiology.

From the standpoint of its printing, this book has many advantages. The paper is a pale greenish tint which is easy on the eyes, and the colored prints on this paper are particularly vivid.

H. J. C.

Mental Hygiene in the Classroom. Report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association with the Cooperation of the National Committee for Mental Hygiene, Inc., and the American Orthopsychiatric Association, Inc. Cloth. Price, 20c. Pp. 70. Chicago: The American Medical Association.

This excellent little seventy-page manual in mental hygiene will be welcomed not only by teachers but by physicians, social workers and nurses; in fact by everyone interested in the welfare and education of children. Interesting and significant, the booklet represents the cooperative efforts of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association assisted by the National Association for Mental

Hygiene and the American Orthopsychiatric Association.

The foreword states: "The purpose of this manual is to present in problem form to the teacher or other interested reader some of the most common situations demanding a functioning knowledge of the principles of mental hygiene."

The situations are abstracts of case histories derived from the observation of children's behavior. In each instance three possibilities are suggested for handling the problem. A "best" solution for each has been picked by specialists in mental hygiene. Fifty-three typical situations are treated. After a perusal of the problems and discussion thereof one should be convinced of the purposiveness of behavior—that the cause-effect relationship applies here as in other fields.

The presentation is well written, clear and devoid of technicalities. A well chosen list of books for suggested reading is appended. It is recommended with enthusiasm.

A. M. G.

The Doctor Takes A Holiday. By Mary McKibbin-Harper, M. D. Cloth. Price, \$2.50. Pp. 349, illustrated. Cedar Rapids, Iowa: The Torch Press, 1941.

Dedicated to the American Medical Women's Association, with which the author has been connected for many years, and to doctors everywhere, this book, "essentially one of travel in the Orient, is sociological in its scope, describing native customs, religions and superstitions and it is an eye-opener as to native medical customs and the beneficent influences of education and modern health service." Members of the profession reading it will wish that they too might lay aside for a time the heavy cloak of their high calling and steal away "Somewhere east of Suez where the best is like the worst"—to wander by the gate of Damascus into temple areas and elsewhere, but to return, after "wandering on a foreign strand," to exclaim, as did Mary McKibbin-Harper, "This is my own, my native land."

D. L. C.

Synopsis Of Materia Medica, Toxicology And Pharmacology For Students and Practitioners Of Medicine. By Forrest Ramon Davison, B. A., M. Sc., Ph. D., M. B., Assistant Professor of Pharmacology, the School of Medicine, University of Arkansas, Little Rock, Arkansas. Cloth. Price, \$5.00. Pp. 633, with 45 illustrations, including 4 in color. St. Louis: The C. V. Mosby Company, 1940.

The author of this book presents a brief synopsis of materia medica, pharmacology and toxicology for the student and general practitioner of medicine. He realizes that these subjects are an integral part of the science of medicine and he has correlated these subjects with the practice of medicine. He has presented only those drugs, which may be found in the U. S. P., N. F., and N. N. R.—drugs whose therapeutic effectiveness has been established by time and experience.

In addition to a description of drugs and their therapeutic application, he describes the untoward symptoms of their excessive use. Antidotes for poisons are listed and he suggests what every "poison kit" should contain. Well-tried and meritorious prescriptions are added so as to give

the student and practitioner an armamentarium of prescriptions for their use. These prescriptions are models for proper prescription writing and should aid in removing the sloppy attitude toward this phase of medical practice, which, unfortunately, many physicians possess.

The first four chapters deal with the basic principles of pharmacology, materia medica, prescription writing and toxicology. The fifth chapter discusses the classification of drugs and is followed by a discussion of the application of drugs to the skin, wounds and mucosae for their local effects. The next five chapters deal with the action of drugs upon the central and autonomic nervous systems, after which the action of drugs upon muscle and the diuretic effect of drugs follows. Three chapters are given over to discussing the effect of metals and metalloids, and four chapters are devoted to biologics, including vitamins, serums, vaccines, hormones, etc. In the concluding chapter is a discussion of miscellaneous drugs including the sulfonamide derivatives, iodine and its derivatives, quinine and other antimalarials, thiocyanates, oxygen-carbon dioxide mixtures and helium gases.

The author, though not an actual doctor of medicine, holds the degree of Bachelor of Medicine, in addition to a Doctor of Philosophy degree. Being an assistant professor of pharmacology in a grade A medical school he is able to apply the principles which have guided the writing of this book.

The book is well bound and well indexed. The bibliography, though limited, suffices for the needs of the average reader who desires to delve deeper into these interesting subjects. Though the print is small the reader will find no evidence of ocular fatigue after perusal of its pages. Forty-five illustrations are included which help clarify the text. The practitioner who is too busy to spare time for longer volumes will find this synopsis to his liking. The student will find it an excellent refresher for examinations or state boards.

H. J. C.

Obesity And Leanness. By Hugo R. Rony, M. D., Formerly Associate in Medicine and Chief of Endocrine Clinic, Northwestern University School of Medicine, Chicago, Ill.; Formerly Attending Physician, Cook County Hospital, Chicago, Ill.; Member Central Society for Clinical Research, The Association for the Study of Internal Secretions. Cloth. Price, \$3.75. Pp. 300, with 32 engravings. Philadelphia: Lea and Febiger, 1940.

Since 1900, when von Noorden wrote his monograph on obesity, many new lights have been shed on the etiology of obesity and its opposite—leanness. No longer is obesity assumed to be due solely to an excessive intake of food. Endocrine, genetic, metabolic and neurologic factors also play a part. The author, reviewing the literature dealing with this subject, has sifted out the unimportant and presented a good summary of developments in this field during the past forty years.

The first part of this book deals with the metabolism of fats. The second part deals with caloric balance, the effect of the endocrines on caloric needs, the influence of the nervous system and

of heredity. The third part lists a classification of the obesities and the methods of treatment of obesity and leanness.

Despite the fact that the author has covered a wide range of literature, he is able to condense his material, and his method of presentation is direct. Case histories and illustrations clarify important phases of the subject.

A fat person is certain to try to get thin. She will even run the risk of death from such dangerous drugs as dinitrophenol in her search for an ideal figure. It behooves the physician to understand this subject so that he rather than the patent medicine manufacturer or the quack will be called upon to guide the fat patient safely to slimness and good health.

H. J. C.

Physical Medicine. By Frank H. Krusen, M. D., F. A. C. P., Associate Professor of Physical Medicine, the Mayo Foundation, University of Minnesota; Head of the Section on Physical Therapy, The Mayo Clinic; Member of the Council on Physical Therapy of the American Medical Association; Past President of the American Congress of Physical Therapy; Past President of The Academy of Physical Medicine. Cloth. Price, \$10.00. Pp. 846, with 351 illustrations. Philadelphia and London: W. B. Saunders Company, 1941.

Physical medicine is still an infant science. We have highly complicated machines, but we understand comparatively little their effect on the physiology of the body. In this field of science there has been much confusion—claims of miraculous cures, honest and sincere doubts. No other field of medicine seems so attractive to the quack and charlatan. But recent years have seen scientific pioneering in this field and what was recently an art of ballyhoo has been transformed into a complicated science. Massage, thermotherapy, actinotherapy, electrotherapy, hydrotherapy, and mechanotherapy are discussed from the standpoint of physics, physiology, technique, indications, therapeutic effect, and clinical application.

Though the author's personal experience in the Mayo Foundation and Clinic is reflected in his writing, the backbone of this book is the research of many others in this field. He is rather modest in regard to his own experience, which, in a ten-year period, has given him the privilege of observing over fifty thousand cases. The author does not draw conclusions. He presents facts, and leaves it to his readers to test out theories and evaluate methods of treatment. The book is quite specific in telling when to use a procedure, why to use it and how to use it.

H. J. C.

A Review Of The Psychoneuroses At Stockbridge. By Gaylord P. Coon, M. S., M. D., Chief Medical Officer, Boston Psychopathic Hospital; and Alice F. Raymond, A. B., Statistician, Department of Child Hygiene, Harvard School of Public Health. Cloth. Pp. 297. Stockbridge, Mass.: Austin Riggs Foundation, Inc., 1940.

This is a review of the 1,060 psychoneurotic patients treated at Stockbridge, Massachusetts over a period of twenty-five years. The first section of the book deals with the etiologic factors resulting in psychoneuroses and the method of reeducation therapy introduced by Doctor Aus-

tin Riggs. A classification of psychoneurotics into seven classes seems to be rather pointless.

The second part of the book deals with a statistical survey of the cases, while the third part is a summary and a group of appendices.

The reeducation therapy of Stockbridge finds its greatest success in the group of business executives who are over-ambitious and dynamic and drive habitually at fever pitch to the point of mental and physical exhaustion. By educational talks, by orderly regulation of habits or work and rest, these men are trained to more normal method of living. The psychiatrist acts in the capacity of a mental efficiency expert removing waste effort and increasing efficiency.

In contrast with this group is the group of middle-aged women with diminishing charms and disinterested husbands. Psychiatry can not restore to them youth and charm. Also rather hopeless is this method of therapy with the immature man, still unweaned from his mother's apron strings. In these groups the success of the Stockbridge method is in direct proportion to the individual's ability to adjust himself to a world not at all like he would have it.

P. S. B.

Handbook On Social Hygiene. Edited by W. Bayard Long, M. D., Attending Dermatologist and Director of Dermatology and Syphilis Clinics in St. Luke's Hospital, New York; Chairman, Social Hygiene Committee, New York Tuberculosis and Health Association; and Jacob A. Goldberg, M. A., Ph. D., F. A. P. H. A., Secretary, Social Hygiene Committee, New York Tuberculosis and Health Association, and Social Hygiene Council of Greater New York. Cloth. Price, \$4.00. Pp. 442, illustrated with 62 engravings. Philadelphia: Lea and Febiger, 1938.

This book is written for the purpose of aiding all those who are interested in the treatment and control of the venereal diseases.

Syphilis and gonorrhea are admirably discussed from the diagnostic, treatment and control angles and the necessary intertwining of functions of the physician, nurse and social worker. The book is rounded out with discussions on hospitals, venereal disease education and the legal aspects of the venereal diseases.

W. H. Y. S.

Preventive Medicine. By Mark F. Boyd, M. D., M. S., C. P. H. Field Staff Member, International Health Division of the Rockefeller Foundation; formerly Professor of Bacteriology and Preventive Medicine in the Medical Department of the University of Texas. Sixth edition, revised. Cloth. Price, \$5.00. Pp. 588, with 168 illustrations. Philadelphia: W. B. Saunders Company, 1941.

"Preventive medicine . . . seeks to reduce or eradicate disease by removing or altering the responsible etiologic factors." Dr. Boyd makes it clear that relative attention paid to diseases should be proportional to their frequency as causes of death.

The following subjects are dealt with in a clear, concise yet comprehensive manner: diseases due to invading microorganisms, deficiency diseases, occupational diseases, the puerperal state, heredity and disease, hygiene and sanitation. The broad aspects of statistical methods and administration are also well presented.

This is an excellent up-to-date textbook on public health and is recommended for use by health workers, students, and practitioners.

W. D. B.

The American Illustrated Medical Dictionary: A complete dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc. By W. A. Newman Dorland, A. M., M. D., F. A. C. S., Lieut.-Colonel, M. R. C., U. S. Army; Member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association; Editor of the American Pocket Medical Dictionary. With the Collaboration of E. C. L. Miller, M. D., Medical College of Virginia. Nineteenth edition, revised and enlarged. Flexible and stiff binding. Plain, \$7.00. Thumb-Indexed, \$7.50. 1,647 pages with 914 illustrations; including 269 portraits. Philadelphia and London: W. B. Saunders Company, 1941.

Dorland's is more than an American Medical Dictionary; it is an institution—the companion of practicing physicians throughout the land. From 1900, when the first edition was copyrighted, the book has grown into its nineteenth edition—each superior to the one before, all incorporating new words, this one 2,000, hundreds of them defined for the first time in the present edition. As usual the volume is of attractive appearance, and a size convenient to handle. In these days of a rapidly growing medical nomenclature physicians can hardly do without it.

D. L. C.

Truth About Medicines

ACCEPTED DEVICES FOR PHYSICAL THERAPY

The following products have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

Radio-Ear Type C, Special Electronic Hearing Aid.—Consists of a combined microphone and amplifier unit M-5375 with volume control switch and battery "economizer" batteries, and two crystal receivers, each with molded earpiece. The instrument is neat in appearance and substantially made. E. A. Myers and Sons, Inc., Mount Lebanon, Pittsburgh.

Airco Oxygen Therapy Line Regulator, No. 806 8681.—An oxygen therapy line or "station" pressure regulator for use where a manifold is employed to supply oxygen through a pipe line to several station outlets. The outlet fitting accommodates the standard oxygen therapy flowmeters used on the Council accepted Airco Oxygen Therapy Regulator, Style 8481. This regulator is a single stage reducing unit, and it would be extremely dangerous to attach it to commer-

cial oxygen tanks of 2,100 pounds pressure or to any line with pressure in excess of 50 pounds per square inch. Air Reduction Sales Company, Jersey City, N. J.

Burdick Sunlamp, Model QS-4.—This sunlamp generates ultraviolet radiation of an intensity and spectral distribution which renders it suitable for unsupervised use by the layman. The unit operates on the usual house current—alternating current, 115 volt, 60 cycle, 125 watt current consumption. Twenty-five and forty cycle lamps are available. It produces an erythema in less than five minutes at 30 inches. The Burdick Corporation, Milton, Wis.

Fischer Infra-Red Generators, Models 2281, 4040.—These lamps may be used with either a 200 or a 400 watt infra-red element. The flexibility of the stand permits flexibility application of infra-red radiation. The base and upright of the stand measures 48 inches; the extension bar supporting the reflector is 28 inches long. Model 2281 has a "regular" reflector, and the 4040 lamp has a "special faceted" reflector. The reflectors are each 11 inches in diameter. H. G. Fischer & Company, Chicago.

Heidbrink Oropharyngeal Catheter Outfit.—A portable apparatus designed for the oropharyngeal administration of oxygen. It consists of an automatic pressure reducing regulator with adapter for medical oxygen tanks, a flow meter, a humidifying jar, a drip jar and a nasal catheter. When the catheter is properly placed, the automatic pressure regulating valve is opened and the oxygen flows through the apparatus at any desired rate up to 11 liters per minute of oxygen or 14 liters of helium-oxygen mixture. Ohio Chemical and Manufacturing Company, Heidbrink Division, Minneapolis. (J. A. M. A., May 3, 1941, p. 2018.)

Intermediate Bovie Electro-Surgical Unit.—A semiportable apparatus essentially the same as the Council accepted Universal Bovie except for a difference in the construction of the cabinet. The unit proper weighs 70 pounds and is 16 inches high by 15 inches deep; when mounted on the sub-cabinet it is 41½ inches high. The sub-cabinet provides storage space for the accessories. The control panel is located on top of the apparatus and this position is said to be easily accessible to the operator. The Lie-

bel-Flarsheim Company, Cincinnati. (J. A. M. A., May 17, 1941, p. 2268.)

Newman Thermo-Flo.—The Newman Thermo-Flo is designed for the intravaginal application of superheated air in the treatment of chronic inflammatory disease of the pelvic organs. In operation, heated air is circulated through a specially shaped thin-walled rubber bag, which is inserted in the vagina in a collapsed state and then inflated with air so as to distend the vagina. The apparatus consists essentially of a fan, an electrical unit which heats the air, a thermostat for controlling the temperature, a thermometer, and a hand-operated rubber bulb used to inflate the rubber bag. Majestic Surgical Instrument Company, Chicago. (J. A. M. A., May 31, 1941, p. 2502.)

PROPAGANDA FOR REFORM

Super D Cod Liver Oil and Super D Cod Liver Oil Concentrate (The Upjohn Company) Not Acceptable for N. N. R.—These preparations of the Upjohn Company have not been presented formally for the consideration of the Council on Pharmacy and Chemistry. In 1933 the Council declared Upjohn's Super D Cod Liver Oil unacceptable for inclusion in New and Nonofficial Remedies because of semisecret composition, indefinitely designated vitamin potency and its objectionable name. It was brought to the attention of the Council's office by physicians that detail men of the Upjohn Company were making the claim that the Upjohn's Super D Cod Liver Oil and Super D Cod Liver Oil Concentrate were more effective than products utilizing other fish liver oils. The firm was asked for evidence to substantiate such a claim and replied by the citation of evidence which was inconclusive. The Upjohn Company agreed to delete from its advertising any claim which might be objectionable to the Council but could not agree to control the claims made by its detail men. Furthermore, the firm made no agreement to discontinue the use of the phrase "Super D." In view of the foregoing, the Council reaffirmed its rejection of Super D Cod Liver Oil (Upjohn) and declared Super D Cod Liver Oil (Upjohn) and Super D Cod Liver Oil Concentrate (Upjohn) unacceptable for inclusion in New and Nonofficial Remedies. (J. A. M. A., May 3, 1941, p. 2019.)

Mixtures Containing Acetanilid.—Three articles on health hazards in acetanilid-containing nostrums and mixtures appeared in the September, October and November issues of the Journal of the American Dental Association. The author, Dr. Paul J. Hanzlik, delves into the problem of chronic and acute intoxication, chronic effects, which include such symptoms as anorexia, impaired nutrition, loss of body weight, anemia, diminished resistance to intercurrent infections, lassitude, dizziness, headaches and apathy; reviews the question of cyanosis and hemoglobin changes as sulfhemoglobinemia; passes on to an evaluation of addiction and abstinence symptoms and a comparison of the acute fatal and tolerated doses of acetanilid in animals and man, and ends with a discussion of the nature of acetanilid analgesia and the analgesia and symptomatic relief by rational procedures other than the use of analgesic drugs. The reports by Hanzlik offer an up-to-date and complete review on the dangers of acetanilid when subjected to promiscuous use. (J. A. M. A., May 17, 1941, p. 2280.)

Sulfadiazine.—The Council on Pharmacy and Chemistry has given consideration to further sulfonamide derivatives; in particular, the 2-sulfanilamidopyrimidine homologue of sulfanilamide, for which it has recognized the nonproprietary name sulfadiazine. In this connection the Council has considered a preliminary report on sulfadiazine prepared by Dr. Perrin H. Long, and authorized its publication. Sulfadiazine has been distributed for experimental use and clinical investigation. Dr. Long reports that it is too early to make a statement regarding the relative clinical therapeutic merits of sulfadiazine, sulfanilamide, sulfapyridine and sulfathiazole. Their experience to date, however, leads him to believe that sulfadiazine is slightly less effective than sulfapyridine or sulfathiazole in the treatment of pneumococcic pneumonia in human beings; that it is of definite value in the treatment of hemolytic streptococcus and staphylococcic infections in man; and that it produces fewer toxic manifestations than either sulfanilamide, sulfapyridine or sulfathiazole. According to Dr. Long, there is insufficient information at hand on which to establish adequate standards of dosage with sulfadiazine. Dr. Long concludes: The evaluation of this new chemotherapeutic agent will ne-

cessitate extensive experimental and clinical investigation in order to determine its true value. Until the time when such data are available, it is to be hoped that preliminary enthusiasms will not outrun the common sense which we have gained as a result of our experiences with sulfanilamide and its other derivatives during the past five years. (J. A. M. A., May 24, 1941, p. 2399.)

Cyclopropane for Anesthesia.—The Council on Pharmacy and Chemistry reports that the Ohio Chemical and Manufacturing Company was first to submit a brand of cyclopropane for the consideration of the Council. In 1936 the Council voted to defer further consideration of the agent until more evidence of its usefulness was available. Subsequently, with the accumulation of the additional clinical and pharmacologic evidence considered in the further report of the Council on the gas published in 1939 without reference to particular brands, it was voted to accept the manufacturer's brand of cyclopropane provided it emphasize in its advertising that the product be employed only by those who are thoroughly familiar with the anesthetic agent and include an adequate description of the cardiac arrhythmias encountered with its use and a cautionary statement to avoid the simultaneous use of epinephrine or related substances. Accordingly, the Council was about to recommend acceptance of the product when recent explosions with the gas caused the Council to hold acceptance in abeyance pending investigation into the factors responsible for these accidents. After further consideration of evidence submitted by the manufacturer and the reports in the literature, the Council decided that the explosion hazard of cyclopropane is not due to peculiarities of the gas itself but, as with other anesthetic agents, is directly attributable to accidental ignition, the conditions conducive to which may be avoided by observance of the necessary precautions. In view of this . . . the Council voted to recognize cyclopropane as an anesthetic agent if used with all necessary safeguards, and to accept the brand Cyclopropane for Anesthesia (Ohio Chemical & Mfg. Co.) provided advertising is further revised as indicated and the product is found to conform to the standards of the U. S. Pharmacopeia. (J. A. M. A., May 31, 1941, p. 2504.)

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THE PROBLEM OF BRUCELLOSIS*

By

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Undulant fever, or brucellosis as it is more appropriately called, is now fully recognized as a major public health problem and can no longer be considered a clinical curiosity in any section of the United States. The increasing number of reported cases from all sections of the country vouches for vigilance of the medical profession and for the prevalence of the disease. It is not believed that there is any actual increase in the disease incidence but that the larger number of reported cases is due to increased recognition. Each reported case, however, constitutes a challenge to the medical profession, and to the public health worker in particular.

The history of brucellosis is one of the most interesting in medical progress. Though it is probable that the disease existed in the time of Hippocrates, its modern history began about 50 years ago. At that time the Island of Malta was, as now, an important way-station of the British on their route to India. Soldiers and sailors were sent there for acclimation before being sent to the far east. A large number of these service men fell victims to a malady which was prevalent on the Island and in many other areas along the Mediterranean.

David Bruce, later one of the pioneers in the investigation of tropical diseases, was serving his tour of duty on the Island at the time. He noted these cases and was unwilling to accept them as "typhoid-malaria" as they were then being called. In 1886,

while routinely examining sections of the spleen from one of the fatal cases, he came upon "enormous numbers of single micrococci." This led in time to successful culture of the organism and reproduction of the disease in monkeys by inoculation. The organism was called *Micrococcus melitensis*.¹

The discovery of the etiologic agent of this disease was only the beginning. There were so many problems surrounding the disease that no satisfactory approach could be made. Finally, in 1904, a commission was appointed, composed of British Army surgeons and Maltese physicians and headed by Bruce, to study the disease further. In due time it was learned that milch goats, the chief source of dairy products and meat on the Island of Malta, were infected and were acting as the reservoir of the disease. The British Government then forbade the use of goats' milk and shipped condensed milk from England for the use of its forces. There was an immediate and great decrease in the incidence of undulant fever.

In 1897 Bang,² a Danish bacteriologist, was studying abortion in cattle and was successful in isolating a bacillus from a stillborn calf with which he was able to reproduce the disease. In the succeeding years, this *Bacillus abortus* was found responsible for contagious abortion among cattle throughout the northern hemisphere.

It was also noted that persons handling aborting cows often developed all the signs and symptoms of Malta fever. Dr. Alice Evans³ of the U. S. Public Health Service sought to investigate the cause of this dis-

1. Bruce, D.: A New Form of Fever Found on the Borders of the Mediterranean, Ann. Inst. Pasteur 7: 289, 1893.

2. Bang, B.: The Etiology of Contagious Abortion, Ztschri f. Tiermed. 1: 241, 1897.

3. Evans, A. C.: Further Studies on Bacterium Abortus and Related Bacteria, J. Infect. Dis. 22: 580, 1918.

*Read before the Association in annual session, Mobile, April 15, 1941.

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ease in relation to that of Malta fever and in 1918 announced that the *Micrococcus melitensis* of Bruce and the *Bacillus abortus* of Bang were virtually alike, differing only in certain minor details. A short time later it was revealed that the organism isolated from swine by Traum in 1914 was also a member of this family of organisms.

As a tribute to Bruce, it was proposed by Meyers and Shaw in 1920 that this group be named *Brucella*. Following acceptance of this name, Evans suggested that the term brucellosis be applied to the disease produced by organisms of this group. Today the terms undulant fever and brucellosis are about equally used. Many other terms, such as Mediterranean fever, Malta fever, goat fever, rock fever, Gibraltar fever, Neapolitan fever, Texas fever, Rio Grande fever and Bang's fever, have been almost completely dropped. It seems likely that in time brucellosis will have displaced them all, for it refers directly to the etiologic agent and may be applied to any disease process produced by the *Brucella*.

Recently accumulated evidence points to the fact that brucellosis has existed in the western hemisphere since the time of Cortez. The first authentic case originating in the United States was reported by Craig⁴ in 1905. Then, in 1911, it was revealed by Ferenbaugh,⁵ and by Gentry and Ferenbaugh, that the disease was prevalent in southwestern Texas and arose from infected goats' milk. In recent years the number of reported cases has steadily increased. Whereas there were only 25 cases reported in the United States in 1925, there were 1,420 in 1930; 1,897 in 1935 and 3,358 in 1940.

There are three species of *Brucella* which may produce disease in man and animals. They are the *Brucella melitensis* of goats, *Brucella abortus* of cattle and *Brucella suis* of swine. A paramelitensis strain has also been recognized but its full significance has not yet been appraised. It is difficult to infect hogs with the *Brucella* organism of cows

or goats, but swine *Brucella* may infect cattle and possibly goats. The *Brucella* organism of goats and cattle are infectious for each other. Thus it is evident that the various species of *Brucella* are not confined to their natural hosts. *Brucella* infections have also been demonstrated in sheep, horses, mules, dogs, buffaloes, deer, rabbits and poultry, but there is no evidence to show that these hosts are significant reservoirs of infection. The importance of the human being as a carrier has not been completely evaluated to date.

Man has been found susceptible to all species of *Brucella*. It is observed, however, that the brucellosis of goat and swine is not only more infectious for man than that of cattle, but, also, that they tend to produce a more severe disease.

In the southwest, cattle and goats have probably the important role in the dissemination of the disease, while in the midwestern states swine have been thought to be more important. Despite the fact that such a great part of the southern states is rural, they have shown comparatively little brucellosis. This fact has not been fully explained but is attributed, at least in part, to the relatively little livestock raising in this section of the country.

In the ten-year period from 1931-40 there were 427 cases of undulant fever reported in Alabama. There were 20 cases in 1931; 54 in 1936, and 70 in 1940. The latter figure represents the largest number reported for this state in any one year. Thus one can see that the disease is either showing an actual increase or that it is being better recognized. In any event, these figures should serve as a warning for the practitioners in the state to be on guard.

Another question brought out by our vital statistics is that of disease mortality. Hardy and others⁷ found that in a large series of cases in Iowa the mortality was about 3 per cent. Almost all investigators place the mortality rate below 5 per cent, and some as low as one per cent. On the other hand, for the last eight years for which figures are available (1932-1939), there were 337 reported cases in Alabama with 26 deaths, a

4. Craig, C. F.: The Symptomatology and Diagnosis of Malta Fever, with the Report of Additional Cases, Internat. Clin., Series 15, 57: 730, 1905.

5. Ferenbaugh, T. L.: Endemic Mediterranean Fever in Southwest Texas, J. A. M. A. 57: 730, 1911.

6. Gentry, E. R., and Ferenbaugh, T. L.: Endemic Malta Fever in Texas with Isolation of *Micrococcus Melitensis*, J. A. M. A. 57: 889, 1911.

7. Hardy, A. V.; Jordan, C. F., and Borts, I. H.: Undulant Fever. Further Epidemiologic and Clinical Observations in Iowa, J. A. M. A. 107: 559, 1936.

mortality of 7.71 per cent. Such a discrepancy is not readily explainable but it would make one suspicious that many of the milder cases in Alabama are not being recognized. It seems unlikely that the brucellosis seen in Alabama is so much more severe than that seen in other sections of the country.

In looking towards the future, one should attempt to appraise our present control measures and plan for more adequate methods to be attained. It is obvious that we are not in a public health Utopia, so what can we do to improve the situation? Such a survey must be founded upon the fundamental facts concerning the epidemiology of the *Brucella* infections.

The three main routes of infection for man generally recognized are:

1. Ingestion of or contact with raw infected milk or milk products.
2. Contact with discharges of the aborted fetus and/or membranes of infected animals.
3. Ingestion of uncooked or insufficiently cooked meats of infected animals, particularly liver and sausages.

Milk and milk products have in the past been the most important sources of infection, and no doubt remain so in rural sections today. Pasteurization has done a great deal to eliminate the hazard of brucellosis in urban groups, but the large percentage of the population which is still consuming raw milk and raw milk products indicates the inadequacy of this measure. Such a statement is not intended to discourage pasteurization. The results attained in brucellosis alone justify its existence if one completely ignores its importance in the control of other infectious diseases. Whatever the importance of pasteurization in the control of brucellosis, it is not the complete answer to the problem. It has been estimated that ten millions of our population are potentially exposed to brucellosis before milk reaches the stage of pasteurization. Too, such a measure would not protect individuals exposed by other means.

The prevention of spread due to contact with discharges, membranes or aborted fetuses of infected animals is one of our very acute problems. All of our statistics show the high incidence of infection among veterinarians and others caring for infected animals. Recent advances in the preparation

of a dependable vaccine are promising. Huddleson⁸ and others have recently shown that *Brucella* become incapsulated when they reach a high degree of virulence due to repeated passage through experimental animals. Certain extracts of this capsular material have been successful in protecting experimental animals against many fatal doses of virulent *Brucella*. This material has not had a thorough trial in man. Libby and his coworkers by means of a vaccine have been successful in protecting a small group of laboratory workers who are constantly handling highly virulent cultures and infected animals. They have used a vaccine prepared of highly virulent organisms. It seems unlikely that attenuated living cultures will ever have any direct application to protection of man. The recently publicized strain 19 now being used by the Department of Agriculture is an example of this type of vaccine. As yet, the use of a living culture vaccine in man is fraught with too much danger for even experimental use. Despite the large amount of work done, its value in cattle has not been established due to difficulties of control and to the long-termed nature of the experiments.

Insofar as the prevention of spread by ingestion of insufficiently cooked or uncooked meats is concerned, there seems little hope except in the eradication of the disease in animals consumed by man. Of course the publicizing of the danger of such meats is of some value and should be continued. Such publicity often acts as a double-edged sword in the prevention of other diseases such as tularemia and trichinosis, as well as brucellosis.

It is obvious from the foregoing statements that there is much to be desired in the control of brucellosis. Many additional facts relative to its epidemiology must be obtained. Here are some of the more important problems to be solved:

1. The importance of human carriers must be more definitely appraised.
2. A thorough search must be conducted to discover any other important reservoirs than cattle, goats and swine. Also, the importance of swine in the transmission of brucellosis must be more accurately determined.

8. Huddleson, I. F.: Personal Communication.

3. The possibility of insect vectors of the disease must be answered.

4. Water supplies, either natural or artificial, may be another factor in its transmission. Recent evidence has suggested its importance but the final answer is yet unknown.

If the medical profession were in possession of these facts today a more sane and adequate approach to the prevention and control of brucellosis would be possible.

It has been said that undulant fever is like syphilis in that it may attack any organ of the body. There are certain signs and symptoms which are suggestive of the disease but there are no pathognomonic symptoms or findings. As with any other disease under like circumstances, laboratory findings have assumed great importance in its diagnosis. The laboratory tests which are of value are the agglutination test, the intradermal test, opsonocytophagic test, white blood cell and differential counts, and cultural studies. The first three mentioned tests may give conflicting reports, consequently Huddleson⁹ has proposed a system for interpretation of the tests.

Agglutination Test	Allergic Skin Test	Opsonocytophagic Power of Blood	Status Toward Brucella
—	—	0 to 20% of cells slight	Susceptible
—	+	0 to 40% of cells marked	Infected
+	+	0 to 40% of cells marked	Infected
—	+	60 to 100% of cells marked	Immune
+	+	60 to 100% of cells marked	Immune

This system is of definite value but certainly is not applicable in some cases. It probably should be utilized until some better system can be evolved. The white blood counts are of supportive value but are not generally considered as diagnostic. However, the only means by which an unequivocal diagnosis of active brucellosis can be made is by obtaining a positive culture from the body or some of its excreta.

The treatment of brucellosis has been a perplexing problem to practitioners since the disease was first recognized. Although many agents have been used, it has been

difficult to evaluate their efficacy due to the nature of the disease, the uncertainty of diagnosis, and the relatively small number of cases treated by any one agent. The very fact that a large number of remedies still exists in supposedly good repute proclaims the ineffectiveness of all.

The use of immune horse serum was first reported by Wright. His results were far from encouraging. Recently Foshay¹⁰ has obtained encouraging results with an antiserum prepared from goats. Generally speaking, however, if serum is ever proven to be effective, its use will be confined to acute cases. Convalescent serum has also been used but the reports are conflicting.

Vaccine therapy has been extensively used in the treatment of brucellosis in the United States. The reports here, too, have been conflicting but it is probable that its use will be confined to chronic cases. In the acute stage of the disease the use of vaccines may actually be harmful.

Trypaflavine, metaphen and other drugs have been reported favorably, but this has not been substantiated in experimental animals or in large series of cases. Recently, much work has been done with the various sulfonamide compounds. In some instances the results have been encouraging but it does not appear that we have yet discovered a specific chemotherapeutic agent for brucellosis.

In conclusion, it may be said that many steps have been taken in the right direction toward the control of brucellosis. It is just as evident, however, that further vigilance must be practiced in the now known control measures. Public health administrators are dependent upon research workers for elucidation of many disputed questions before the disease will ever be well controlled or completely eradicated.

The problem of eradicating the disease in cattle in Alabama is being pushed rather aggressively by the Bureau of Animal Industry. Its program consists of testing all cattle and destroying the positive reactors with partial compensation to the owner. At the present time there are eleven counties in the state which are accredited, meaning that on repeated test less than one per cent of the cattle are reactors. Three additional

9. Huddleson, I. F.: *Brucellosis in Man and Animals*, New York, The Commonwealth Fund, 1939, p. 240.

10. Foshay, L.: *Modern Medical Therapy in General Practice*, Baltimore, Williams and Wilkins Co., 1940, p. 1316.

counties have had this second test and have been recommended as accredited counties. Two other counties have had their first tests. In addition, there are approximately 1,000 herds in the state which have been tested and declared free of brucellosis. The northern part of Alabama is relatively free of the disease and the heaviest rates are found in the central black belt counties. This control program based on the testing, segregating and disposing of infected animals is a commendable project and must be continued. Clean or non-infected herds must be retested at frequent intervals in order to maintain their freedom from disease. All contacts with or additions to the herd must be known to be free of Bang's disease. Unless the incidence of positive reactors can be kept below one per cent, there will be an appreciable spread to human beings.

It is possible that when a more careful evaluation of brucellosis in swine has been made, it may be found necessary to carry out a control program in swine comparable to that now in effect with cattle. Huddleson and others¹¹ have presented evidence that hogs spontaneously overcome the disease in a period of a few months. This conclusion, however, was based on agglutination tests alone and may not stand up under further study. Certainly, the importance of swine in the dissemination of brucellosis should be investigated further. The increasing frequency with which *Brucella suis* infections are seen suggests the necessity of this study.

Pasteurization of all milk must be extended. When milk is used in areas where pasteurization is not possible, and from potentially infected herds, there is adequate reason to advocate boiling of the milk. The pasteurization of such milk products as butter and cheese should receive more serious consideration than it has in the past.

The protection of slaughter-house workers, veterinarians, dairy husbandrymen, etc., must be forwarded by educating them relative to the mode of transmission of brucellosis. The immediate disinfection of wounds sustained while at work, and the desirability of wearing rubber gloves when abrasions are present, must be emphasized. However,

11. Huddleson, I. F.; Johnson, H. W., and Hamann, E. E.: A Study of *Brucella* Infection in Swine and Employees of Packing-Houses, J. Am. Vet. M. A. 36: 16, 1932.

further development of vaccines now under study may offer a greater hope than any of these measures in protecting this group of workers.

It is the obligation of practicing physicians and public health workers to remind the public of the dangers associated with eating uncooked meats, especially sausage.

Cases of undulant fever should be isolated and the secretions, discharges and fomites carefully disinfected.

It is imperative that workers in research medicine strive to elucidate some of the many problems which now cloud the entire issue of brucellosis. The research should be directed toward learning more of the epidemiology of the disease, more accurate diagnostic methods, and more effective therapeutic procedures.

FUNCTIONAL CARDIAC DISORDERS*

By

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For some reason the human being has always been more fearful about his heart than about any of his other organs. Heart disease connotes the dread possibility, or to many even the probability, of sudden death, the very thought of which is terrifying. Few are aware of the different types of heart disorder and consequently do not know that long years of activity are compatible with fairly serious disturbances of the cardiac apparatus, so the thought of heart disease in any form brings terror to the mind of the average man.

It is no wonder then that cardiac neuroses and functional heart disease are so frequent, that so many people with no form of heart dysfunction are miserable over symptoms they wrongly interpret as being due to their hearts, and that people with actual organic disease often become so unnecessarily apprehensive and unhappy that they develop neuroses on top of their organic lesions. Fear is the normal reaction to danger while anxiety is an abnormally severe reaction to dangers that are mild or that possibly do not even exist. Anxiety is the predominant

*Read before the Association in annual session, Mobile, April 16, 1941.

symptom in these cases and the sufferers from these functional disorders are so numerous that this subject deserves serious consideration. Most textbooks ignore it or dismiss it with a few words.

In cardiac neuroses there may be abnormal physical findings without structural change in the heart; as, for instance, the so-called hemic or functional murmurs. These are usually soft systolic murmurs, occurring in the second left interspace, and generally indicate no organic disease of the heart, so they are without significance so far as the integrity of the cardiovascular apparatus is concerned. On the other hand, there may be symptoms with no abnormal physical signs, as examples of which, smothering spells and choking feelings are frequently seen. Thirdly, neuroses may occur in the presence of actual organic disease of the heart, an illustration of which is the aching pain and invalidism now seen in so many victims of coronary infarction after infarction has healed and the heart has become fairly competent again.

A large group of disorders in which there is no cardiac lesion may give rise to cardiac symptoms; as, for example, the following: disorders due to emotional states; exhaustion following acute illness; toxic agents such as coffee, tobacco, or alcohol; and reflex disturbances from other organs, such as the stomach, the thyroid gland, and particularly the gallbladder.

Emotional disturbances play a prominent part in the causation of cardiac neuroses. The "emotions have a direct influence on those bodily functions controlled by the vegetative nervous system, and whose workings normally proceed without participation by the conscious mind." Thus are the well-known nausea and diarrhea, blushing, tachycardia and many other symptoms as the result of grief, anger, fear or other emotional states. These effects may be due to the direct action of the vegetative nervous system on the organ itself, or they may be the result of action on the ductless glands such as the suprarenals, which release adrenalin under the influence of fear or intense excitement, and thus indirectly affect the organ in question.

Alvarez¹ in a recent article comments in a

1. Alvarez, Walter C.: New Light on the Mechanisms by which Nervousness Causes Discomfort, J. A. M. A. 115: 1010-1013 (Sept. 21) '40.

very interesting way on the difficulty of making people with functional troubles believe that all their symptoms come from nervous interference with their heart or other organs. They often resent being told that their symptoms are neurogenic in nature for this implies to them that the examiner regards their complaints as imaginary, while they know their own feelings, which are very real and very unpleasant. Dr. Alvarez, basing his theory on the experimental work of Cushing, Cannon and others, throws new light on the mechanisms at work and offers a plausible and ingenious explanation of the way in which purely functional disorders can cause such profound discomfort. I can do no better than quote his own summary:

"The physician's hardest job often is to convince a patient with functional troubles that all his symptoms are due to the misbehavior of nerves connected with a tired brain. The physician who expects to convince such a patient and to stop him from going the rounds of consultants' offices must have good and scientific explanations for the symptoms.

"Most of the symptoms of these persons suggest an instability of the involuntary nervous system which cause it to play disconcerting tricks on a normal heart, blood vessels, digestive tracts, kidneys and skin. The symptoms suggest storms running out along the autonomic nerves.

"In the normal person there is a sort of thermostat situated in the hypothalamic nuclei at the base of the brain which controls the involuntary nerves and the glands of internal secretion so perfectly that the organs of the body function silently; so silently that the owner is unconscious of them. Normally this 'thermostatic center' is kept in control by the cerebral cortex. When this control is removed in any way, the center works erratically, and storms go out to cause upsets in the functions of many of the organs of the body.

"The 'thermostatic centers' can be upset by fatigue, insomnia and nervous strain. In many persons it behaves erratically because of a bad nervous inheritance, an inheritance that may have produced insanity, equivalents of insanity or abnormalities in sexual developments in other members of the family. The center may be injured also by an encephalitic virus or in older persons by little thromboses due to arteriosclerosis.

"When the storms come out of the brain along the involuntary nerves, at the ends of these nerves are formed powerful chemical substances (acetylcholine, histamine and other substances) which have disturbing effects on most of the organs of the body. This means that the patient need not feel embarrassed about telling of his symptoms. When the storm comes and the powerful hormones are injected into him by his nervous

system, he can no more avoid having alarming symptoms than he could avoid getting drunk if some one were to force a pint of whisky down his throat."

The majority of people who develop these psychic disorders are emotionally unstable and more or less constitutionally inferior, so that this poor makeup may be considered a very important predisposing factor. These individuals react out of all proportion to the severity of a psychic shock or insult so that their balance is easily upset by stimuli that will have very little effect on more stable personalities. Their reaction is not dependent on the severity or the length of the stimulus, but results in anxiety which, as has already been stated, bears no relation to the actual danger involved.

In the study of a given case it is frequently difficult to find the exact causative factors, but investigation of certain clues will often give the answer. The physician should realize the high incidence of constitutional inferiority and should try to elicit a history of previous nervous breakdowns which numbers of these unfortunates have had, and he should try to discover evidences of abnormal reactions which are present in the majority. These individuals are often very introspective and show great concern, in fact an exaggerated fear, over the state of their health, and evidences of marked vasomotor instability are common.

Bearing in mind then these predisposing causes, and having a patient of this general type in whom the seeds of a neurosis exist, what are the usual exciting factors in its production? Oftentimes, these may be hard, almost impossible, to find but frequently the solution is not difficult. Connor² states, and I can verify this from my own experience, that the exciting psychic insults fall into one of four groups. The first and perhaps the most frequent is a careless statement by a doctor to a patient that he has discovered some abnormality of the heart, possibly a murmur, a skip, high blood pressure, or tachycardia. The abnormal finding may be slight and of no significance whatever, but such a discovery told bluntly and without explanatory remarks to an apprehensive, excitable, emotionally unstable individual may play havoc with that individual's peace

of mind and may be the beginning of years of unnecessary anxiety and suffering. Once such a fear is implanted in an impressionable brain it may be almost impossible to obliterate it and to prevent that person from becoming a hopeless invalid. The fear of a disease is often worse than the disease itself and the unnecessary torment in which these sufferers live is pathetic to observe. I have often seen, as I am sure all of you have, such instances follow discovery of a functional murmur or mild hypertension on a life insurance examination. Every day that I practice I realize more and more the need for tact and reassurance in the handling of patients.

The second group of psychic insults are the sudden death of a relative or friend, particularly when such death is due to unsuspected heart disease. An anxious acquaintance of the deceased, after he gets over the shock of the unexpected death, immediately begins to wonder if he, too, could harbor such serious hidden trouble. He begins to worry, soon develops vague chest pains or other symptoms which he refers to his heart, and the anxiety begins. If he does not soon go to the doctor and become reassured, he may develop a definite neurosis, but it is my experience that these neuroses are more easily relieved than those in the first group. Whenever a prominent person dies suddenly from heart disease I can be reasonably sure that within the next few weeks that incident will be the cause of my having several patients who, as a result of the tragedy, have become uneasy about their own hearts. The discovery of cancer has a similar effect on many friends of the victim who immediately become fearful themselves of malignancy unless examined and convinced that no trace of the disease exists.

The psychic insult of the third group is some symptom, not previously experienced, calling the attention of the patient to his heart. Perhaps the most frequent of these symptoms is the extrasystole or premature beat. The sensation caused by a premature beat is often a most unpleasant one and when felt for the first time can be a terrifying experience. Pain around the heart can be equally disturbing, for any pain in the cardiac region has long been associated in the popular mind with angina pectoris and now, with the rapidly increasing lay knowl-

2. Conner, L. A.: Cardiac Neurosis, in *Cyclopedia of Medicine*, vol. 3, pp. 206-207.

edge of coronary infarction, is being too often associated with that condition, so it is not surprising that its sudden appearance causes grave fears and anxiety. Unexplained tachycardia, pounding of the heart and other symptoms frequently direct attention to this organ, producing anxiety states and thus causing the disturbances under discussion.

The fourth and last group of psychic insults are those caused by fear, such as a shell explosion near a soldier, or any prolonged emotional difficulties that may lead to the development of what is called effort syndrome or neurocirculatory asthenia. There is some question as to whether this is or is not a true cardiac neurosis, but the nervous and circulatory symptoms of this disorder are so prominent that I shall consider it in more detail later in the discussion.

The most important symptoms of cardiac neuroses are subjective. They may be slight or very severe. In the mild instances the patient may complain of a little pain around his heart, a premature beat occasionally, a slight choking feeling or fluttering of his heart, all of which may disappear when he is examined and reassured. In many, however, the symptoms are much worse and so severe in some that complete invalidism may occur. The fullness in the chest and the choking bear no relation to exercise but occur when the patient is most nervous or worried about himself and particularly when anything happens to make him conscious of his heart. A rather striking thing is that most of these individuals are young. They complain of weakness and palpitation, and they have tachycardia on exertion or excitement. The tachycardia may at times be confused with hyperthyroidism, but in these nervous states the pulse is slow when the patient is quiet or asleep, while in hyperthyroidism the pulse remains fast even in deep slumber. One important symptom, oftentimes confusing, is shortness of breath, which is very, very prevalent. This is sometime misinterpreted as real cardiac dyspnea, but close observation and questioning will show its true nature. It will be found not to be brought on by exercise but to occur even when the patient is at rest. It has not the characteristics of cardiac dyspnea but is more of a sighing respiration in which the patient states that he cannot get enough air and that only one breath in every four or

five satisfies. He uses the accessory muscles of respiration in order to take as deep a breath as possible, and in severe cases is constantly fatigued from this exertion. There is no cyanosis at all and none of the signs of air hunger. Failure to differentiate this from true cardiac dyspnea has led to many mistaken diagnoses, so any complaint of shortness of breath deserves keen scrutiny and study.

Pain, likewise complained of frequently, may easily be mistaken for angina or true cardiac pain, but, like the sighing respiration already mentioned, can usually be correctly diagnosed if carefully studied. It is generally precordial, not substernal, does not radiate down into the arms or into the neck, and is not brought on by exercise as is genuine angina. It is usually a dull ache, is present a large part of the time, and is not characterized by any of the severe symptoms that go with angina or coronary infarction.

The unpleasant sensation brought on by extrasystoles is sometimes felt as a hard thump, sometimes the heart seems to flutter, "flop" or turn over, and sometimes it is felt as a sudden involuntary gasp—any of which feelings can arouse great distress in the mind of an anxious person not understanding their significance.

Objectively, in these cases no definite evidence of cardiac disease is found. The first objective sign discovered by the examiner is that the patient is of the type under discussion. In many cases is found the soft systolic murmur, usually in the second left interspace, which, as already stated, is not in itself indicative of structural change in the heart. The pulse is often quite labile, being slow at times, then suddenly rapid under the slightest stimulus or excitement. Arrhythmias are frequent, especially premature beats, but occasionally others are found, as paroxysmal auricular tachycardia and, in rare cases, functional paroxysmal auricular fibrillation or flutter. Fibrillation and flutter are more often indicative of organic disease, but premature beats are probably more frequent in functional disease. In these cases there is no cardiac hypertrophy, no hypertension and usually no abnormality of the electrocardiogram—in fact no sign of organic heart disease at all.

The European War with the probability

of our future involvement should make us consider again the so-called neurocirculatory asthenia or effort syndrome which was so prevalent in all the armies, our own included, during the last war. As already said there is some disagreement as to whether this is a real cardiac neurosis but it is generally regarded as of psychogenic origin, occurring in constitutionally inferior persons as the result of exposure, privation, exhaustion and emotional disturbance, brought on, for instance, by such things as the explosion of a shell nearby or being under long continued fire or other similar harrowing experiences. It is called effort syndrome because the symptoms are the same as those brought on ordinarily by extreme effort, while in this disease the slightest stimuli, nervous or physical, produce the same effects. The condition can and does occur in civil life—we all see it daily—but it was so prevalent among soldiers in the last conflict that it was called “soldier’s heart.” There will undoubtedly be much more of it among the civil population following this war because of the greater horrors to which civilians are now subjected by modern aerial warfare, so that we should be constantly on the lookout for it, lest we mistakenly diagnose it as tuberculosis or hyperthyroidism, both of which it may resemble. It is characterized by fatigue, breathlessness and palpitation, even on slight exertion. Fainting and giddiness may occur. Headaches are frequent, as are sweating and blueness or mottling of the hands. Dermatographia and other neurovascular phenomena are seen. The pulse is quite variable, being normal at rest and extremely rapid on the slightest exertion or excitement. It returns to the normal rate much more slowly than usual. The blood pressure also is more changeable than is ordinarily the case, becoming high on exertion or emotional stimulation, with a greater range of variation than in a stable person. The electrocardiogram, as in most of the other cardiac neuroses, is usually normal. The heart is not enlarged and no signs or stigmata of heart disease can be found. It is usually quite difficult to convince victims of this malady that the breathlessness, the palpitation, the tachycardia and the weakness do not signify serious heart disease and many of them become confirmed invalids.

Earlier it was stated that neuroses develop in people with organic heart disease. Worry and anxiety over the seriousness of their condition, over the inability to work, with the consequent financial strain, and over the possibility of sudden death—all these and other emotional stresses lead to their development. Neuroses in these individuals usually are more difficult to relieve than in those with no actual cardiac disorder. Particularly in instances of coronary thrombosis with infarction are these neurogenic disturbances prone to develop. In recent years this has become quite an important matter in connection with disability insurance benefits. For the first few years after the recognition of coronary thrombosis the prognosis was universally regarded as poor and even though there was recovery from the initial attack the individual was considered as permanently and totally disabled. It is now realized that a goodly percentage of these cases recover and the heart becomes competent so that they can do work, especially light work or office work for many years. The disease has made these patients heart conscious, they continue to have vague pains around the precordium, they are fearful and apprehensive, and they lose all self-confidence. They honestly think they are totally disabled, but the insurance companies are becoming increasingly particular and are refusing to pay the disability benefits unless convinced that actual cardiac insufficiency persists. It is quite a difficult matter at times to determine just how complete recovery has become and many lawsuits are now being instituted by patients who feel that they are being defrauded. The burden of proof is now upon the claimant, and if the heart signs and the electrocardiogram have become normal, many companies refuse to pay despite the presence of these neurogenic symptoms that the patient feels are really disabling. The physician who wishes to be fair to both patient and insurance company is often in a difficult position for it may be impossible to draw an exact line between disability and recovery. At present there are no exact criteria by which this can be determined so the doctor should be very careful in all his statements as to disability and prognosis.

The treatment of these disorders lies mainly in the proper psychologic attitude

of the doctor toward the patient. We cannot be too careful, tactful and encouraging in our manner toward these anxious and unfortunate men and women. In the event of the discovery of a soft murmur, an extrasystole, or a slight hypertension in a person with no previous cardiac symptoms, do not tell him carelessly or hurriedly that he has trouble that may be serious if he does not take care of himself. Try to explain that the disturbance is one of function, not of structure, that it is not of significance and will not cause disability in the future. Often-times this alone will prevent the development of a neurosis in an individual who might be scared to death if approached tactlessly and without the proper explanation. The words of the physician have a profound effect on the patient, much more, I think, than we generally realize, so it is incumbent on us to be as careful as possible in our approach toward any individual. A tactful reassurance may save years of suffering and anxiety.

The same need for tact, understanding and encouragement exists in the case of the patient who comes to you after the neurosis has become established. He is already the victim of fears and anxieties that may be groundless but that torment him terribly. Listen to him, examine him thoroughly, and then explain to him that though his bad feelings are real the cause of them is not serious and that he will get well. Do not tell him he imagines the symptoms for he most assuredly does not and I know of no better way in which to make him worse and at the same time lose him as a patient. He feels everything he tells you he feels and it is not imagination but a disturbed functioning of his autonomic nervous system that is responsible for his feelings. Try to tell him that worry, exhaustion, emotional strain, or whatever the cause may be, has upset his nervous system, causing this disorder of function to make him feel as he does. It will be an excellent thing to talk to him along the lines suggested by Dr. Alvarez. Try to show him that he has no organic disease, that he will gradually improve as he regains his self-confidence, and that he has nothing to fear as to the integrity of his heart. It is remarkable the help that soothing words of this kind can be to an individual in distress. They do much more good than medicine. In

fact, very little medicine is needed in these cases—a little bromide perhaps or small doses of phenobarbital. Do not tell a patient that his heart is normal and then give digitalis. Most people know that digitalis is a cardiac drug and the giving of this creates at once the suspicion that you are not being entirely truthful. Do not restrict unnecessarily his exercise in the absence of real organic heart disease. Golf may be suitable for some, more strenuous exercise for others, but this depends upon his general physique rather than upon the state of his heart. Explain that any rest you may prescribe is to allow his shattered nerves to recuperate, not to protect his heart, which, in itself, needs no protection. Do not mention the word angina unless absolutely necessary. Then be as reassuring as possible.

For special symptoms, like extrasystoles, bromide or phenobarbital is the best drug, but usually reassurance will suffice. Sometimes the stopping of coffee or tea will cause these premature contractions to cease. Occasionally quinidine may be needed but the patient's understanding of the condition is the most important therapeutic measure.

The victim of neurocirculatory asthenia may have to be handled a little differently. The Journal of the American Medical Association says in a recent editorial that the most important treatment of this condition is its prevention. This can be done by a more thorough examination of recruits so that as many of the unfit as possible may be weeded out on their entrance in the army or while in camp and thus not be subjected to the hardships of an active military campaign. Once the condition has developed, however, the same psychologic approach, tact and reassurance are just as necessary as in the kindred diseases. In addition, many of these cases will require a considerable period of bed rest followed by graduated exercises so that an interval of several months may be necessary for recovery.

Inasmuch as these disorders so often simulate tuberculosis, hyperthyroidism and other diseases it is axiomatic that a very thorough examination is a most important part of treatment. This can usually be satisfactorily done by the ordinary methods of physical diagnosis and it is only in the rare cases that more complicated instrumental measures such as x-rays and electrocardiograms need

be used. In order for your words to bear any weight with the patient, the examination must be thorough for a cursory going over fails absolutely to satisfy these individuals, whose distressed minds must be relieved if they are to be helped. A well conducted examination will not only prevent the doctor from making a mistake but will bring great confidence and mental relief to a tortured, unhappy soul.

In summary then, the important essentials in the treatment of these disorders are, first, a thorough examination and then the proper approach with constantly repeated words of encouragement and reassurance. Faithful following of these ideals will give comfort to a large class of sufferers who, all too frequently, fail to get the help to which they are entitled.

THE TREATMENT OF COMMON SKIN DISEASES*

By

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In preparing this paper I make no claim to originality, I bring you no new discovery, and I present no new method of treatment of skin diseases.

From your standpoint and mine, the most practical part of dermatology is treatment. To those who are experienced, this may easily be carried to the point of tedious simplicity, but observation has taught me that practitioners should have pointed out to them specific selections of remedies that have proven their merit in a given disease, and, if possible, some definite directions as to their use.

I shall try to touch very briefly on some of the commoner skin diseases encountered in the average daily general practice, giving, if I can, a point in diagnosis and a word as to the remedies most applicable and most satisfactory.

IMPETIGO CONTAGIOSA

This is an acute, inflammatory and contagious skin disease due to the invasion of the staphylococcus pus-forming germ, more commonly seen in children, and much more prevalent in warm weather. It is character-

ized by the formation of large clear blisters on the skin, with an erythematous or red area of skin around the lesions. These large blisters or bullae rapidly become purulent, and break and discharge pus, and dry, to form purulent crusts, and other lesions appear in close proximity. The treatment is local. Thoroughly cleanse the skin with warm water and soap, clipping off all blisters and pustules with sharp curved scissors, and trimming away all dead skin. Then sponge out each lesion with peroxide or alcohol, and rub well into each lesion one to three per cent ammoniated mercury in vaseline. Sterilize the surrounding skin with alcohol. Repeat this performance twice daily. Avoid the use of adhesive plaster on these lesions. These cases usually clear up in just a few days with careful treatment.

FURUNCLES

Use hot boric acid compresses for 30 minutes to one hour twice daily and dress with 3% ammoniated mercury and 6% ichthyol in vaseline, spread on cloth and strapped on with adhesive plaster. As soon as there is fluctuation, incise and drain. In crops of boils or multiple boils intramuscular injections of a 2 cc. ampoule of manganese butyrate, one per cent solution, every 4 or 5 days for a total of 3 or 4 doses will usually suffice to clear up these cases. Manganese butyrate will give far better results than staphylococcus vaccines.

CARBUNCLES

If seen early, block off with novocaine and make a crucial incision, dissect back the skin flaps, and with a sharp curette thoroughly remove all the diseased tissues well out to the margins and deep enough to include all the affected subcutaneous tissues, pack lightly with sterile gauze, and dress with a sterile gauze pad. There will be no more pain if this is thoroughly done, and the lesion heals up in a relatively short time. If seen late, incise and drain as well as you can and pack the cavity with powdered sulfanilamide, and dress with a sterile gauze pad. The carbuncles usually clear up in a few days under this treatment.

DERMATITIS VENENATA

We see a great deal of poison oak and poison ivy this time of the year, and some little of it the year round. Do not treat with grease. The toxic material that reeks havoc with the susceptible skin is the oil in the

*Read before the Southwestern Division of the Association, Thomasville, July 16, 1941.

sap of the offending growth and grease adds oil to oil and spreads the trouble over a larger area of skin. Wash very thoroughly and copiously twice daily with warm water and soap, opening all vesicles that are large enough to contain serum. After bathing the skin, sponge off with alcohol and apply continuous wet dressings of solution of aluminum acetate (Burrow's solution) or a very mild Dakin's solution, or you may use a magnesia lotion for the astringent effect. After the skin is dry and harsh you may use a soothing greasy application such as calamine emulsion or even carbolated vaseline. X-ray treatments hasten the drying of the lesions and control the itching to a marked degree. Ivy and oak extracts for injection are very uncertain. A much more satisfactory injection is to draw off from the vein in the arm at the bend of the elbow 10 cc. of blood, and immediately inject into the gluteal muscle. Repeat every 4 or 5 days for a total of 3 or 4 injections. This affords immunity for one season.

RINGWORM

A few years ago we talked about a vegetable fungus that attacked the skin of the human being. Today we know of more than 40 varieties of the fungus, and each has a site of predilection on the skin. Ringworm of the scalp is common in children. It causes bald spots to appear on the head, not the slick and smooth bald spots encountered in alopecia areata, but spots with many broken off hairs or stumps. This disease sometimes takes most of the hair from the scalp before it is checked. The best treatment to use is sulphur 12%, betanaphthol 6% in green soap. Scrub the scalp each day with this soap and warm water, rubbing up a good lather, and wash out thoroughly and dry the scalp with a rough towel. Then rub well into each lesion a salve consisting of sulphur 12% and betanaphthol 6% in vaseline, put a close fitting cap on the head and leave salve on for 24 hours and wash out again with the shampoo. Repeat this treatment every day, pulling out all dead stumps each day. Weekly applications around the margins of the lesions of tricresol, immediately neutralized with alcohol, will hasten the cure.

Tinea Cruris (Ringworm of the groin): This trouble affects the skin in the groin, and on the scrotum and around the anus and on the buttocks. It causes an intense itching.

The skin in the groin is thin and sensitive. Apply at night salicylic acid 6% and sulphur 12% in vaseline, and in the day time apply calamine lotion. X-ray is often required to cure this condition.

Epidermophytosis, Dermomycosis, Parasitic Eczema: This trouble is usually encountered on the hands and feet. It may be intensely itchy, and there may be an eczematoid eruption. Secondary pus infection is a common complication. In the weeping stages, a continuous wet dressing, using Dakin's solution, is very good treatment and it will control the pus infection. Thiersch's solution is also an excellent treatment. Ammoniated mercury 3% and ichthyol 6% in vaseline is also useful in the secondary pus infections. After the pus infection and the weeping surfaces are dried up, use salicylic acid 6% and sulphur 12% in vaseline. Apply twice daily and cover lightly with gauze. Very hard and dry and thick chronic areas will have to be denuded with Whitfield ointment, and then the mild salicylic acid. Sulphur salve is used to heal. X-ray treatments are often necessary to cure these cases.

Tinea Circinata, or ringworm infection of the smooth skin, usually responds very well to the mild salicylic acid and sulphur salve.

TOXIC RASH

A generalized, itchy, erythematous, vesicular and papular rash produced by a toxic condition of the system, poor elimination and dietary indiscretions. Put the patient to bed, and eliminate sweets and fried foods. Stimulating drinks, caffeinated or alcoholic, and all acid forming foods should be eliminated from the diet. The patient should have a saline purge and then a daily saline laxative with thorough alkalization of the system. Give colloidal baths (soda and starch) once or twice daily. Apply locally calamine lotion or magnesia lotion. Sometimes x-ray treatments of the more pronounced lesions will be beneficial.

SEBORRHEIC DERMATITIS

This disease is parasitic in origin and contagious. It is disseminated by the thousands of beauty and barber shops over the country. It usually begins on the scalp, and may be just a dandruff and produce little or no symptoms, or there may be red itchy and scaly patches—regular eczematoid areas on the scalp, and there may be an eczematoid

eruption in and around the ears, in the eyebrows, along the sides of the nose, down the chest, in the axillae, around the navel, and on the lower portion of the abdominal surface, especially the area covered with hair. In women this condition often spreads around the vaginal orifice and produces a great deal of itching and discomfort. The best local application for this trouble is mild salicylic acid and sulphur in vaseline or other suitable base, either greasy or vanishing. In a vanishing base, and using colloidal sulphur, we have a much easier medicine to use, and more agreeable, but not more efficacious. Some cases require x-ray treatment in addition to salves and lotions and emulsions.

SCABIES

This is an ever-present disease but it is usually worse in winter. It is a highly contagious disease caused by the *Acarus scabiei*, and characterized by itching and lesions of a papular, vesicular and pustular type, predominately on the fingers and hands, wrists, axillary folds, lower abdomen and the genital and anal regions. Usually the entire family will present symptoms. Scabies is very much more itchy at night. The treatment is purely external and local. Sulphur is the cardinal remedy. Commence treatment by having the patient take a bath with warm water and soft soap, dry the skin well after the bath, and immediately rub on the entire skin surface, from the neck to the tips of the fingers and the tips of the toes, an ointment consisting of sulphur drams 1, balsam of Peru drams $\frac{1}{2}$, and betanaphthol 10 grains to each ounce of vaseline or lard. Put on underwear with long legs and sleeves, rub this salve on well for 3 nights and 3 mornings, keeping on the same underwear all the time treatment is being given. Twelve hours after the last rub with salve have the patient take another hot bath, using plenty of soap and hot water, change clothing and bed linens and towels. Wash and boil all clothing that can be washed before being brought back into the house. Dry clean all those garments that cannot be put in the tub. With a hot iron press out all blankets and quilts, and put out in the sunshine and fresh air for a few days. Scald out the bath tub, and scald off the toilet seat. After the final cleansing bath, the skin is very likely to be itchy again. Do not repeat the scabies treat-

ment. The itching is very likely a sulphur dermatitis. Use freely calamine lotion or calamine emulsion to soothe the irritated skin for a few days. In the cases of children under 10 years of age, use a half strength ointment. Babies and very young children will very likely have the lesions in the palms and on the soles, and in the face, and even on the scalp. These lesions of course have to be treated, and infants and young children usually respond very well to sulphur in lard or vaseline, about $\frac{1}{2}$ dram to the ounce of the base. We all know the remedy, but how to use properly is most important. Faulty methods of handling and failure to get the germs out of the house after they have been destroyed on the skin of the patient, and failure to have all members of the family treated at the same time will produce embarrassing situations for patient and physician alike.

PSORIASIS

We see many cases of psoriasis now. We are not certain as to the cause, and there is no known cure. The disease is characterized by the formation of reddish lesions on the skin that are invariably covered with whitish scales, and it is always a dry disease. The classical case shows lesions first about the elbows and the knees and on the scalp, near the hair line. Remember that psoriasis is always a dry and scaly skin disease. It is seen in people of all ages and in all walks of life. It is less apt to be seen in young children than in older people. Small patches of psoriasis grow and coalesce to form sometimes very large plaques, and this disease sometimes covers the greater portion of the skin surface. Many cases show no lesions on the exposed surfaces (face and hands). It is much worse in winter when the skin is naturally rather dry, and when there is very little ultraviolet in the rays of the sun. It rarely ever is an itchy disease, and usually does not undermine the general health of the patient. Many cases of psoriasis will clear up under treatment. The most of these recur later—some few perhaps never do.

The best treatment is to wash the affected skin with warm water and soap well to remove all the loose scales, and to rub well into the lesions a salve consisting of ammoniated mercury 10%, with perhaps salicylic acid 6%, in a very penetrating base. I have found crisco to be fairly satisfactory.

Do this at least once daily. Perhaps it is better to have the patient bathe and rub with the salve each night. Expose the entire skin surface to the direct rays of the sun. Of course, get a tan gradually, not a blistering dose of sunshine. Have the patient as nearly nude as possible and have him work in the sunshine—get plenty of physical exercise—perform manual labor, regularly, systematically in the sunshine. Give internally gradually increasing doses of chemically pure carbolic acid in glycerine and peppermint water, commencing with $\frac{1}{2}$ minim, three times daily, to each dose, and increasing by $\frac{1}{2}$ minim, three times daily, about every 10 days until the dose is up to about 3 or 4 minims, or the point of tolerance is reached. If this treatment is persisted in until all the lesions have cleared up entirely from the entire skin surface, the patient may not have a recurrence soon. By far the best results are obtained in the summer. Ultra-violet light is extensively used for psoriasis, but it is a poor substitute for the kind of sunshine that we have in this part of the country, and the patient who lies under the light every day fails to get the exercise and the great amount of perspiration produced by actual physical work in the out of doors, and he fails to respond to treatment nearly so well and so readily as does one who exercises in the sunshine.

KERATOSIS

Dark spots, slightly scaly and rough spots, and maybe itchy spots on the face and backs of hands and forearms—on all the exposed surfaces, are very often encountered in those past 40 years of age, and especially those who are exposed to the elements, and in those with thin and sensitive skins. After 40 the skin begins to lose its natural oiliness and pliability. In those with very thin and sensitive skins and in those who live out of doors, and are exposed to the rays of the sun and to the cold winds, and in those who take no care of the skin, we may and do actually find these conditions in people much younger than 40 years of age. As these lesions form, from time to time casting off a hard crust only to immediately form another one that will be a little thicker and harder, gradually working deeper and deeper into the layers of the skin and finally down into the subcutaneous tissues, we have a precancerous lesion.

These keratoses, whether seborrheic or senile, should be destroyed. When they are superficial they can be softened with a salicylic acid paste and refrigerated with carbon dioxide snow and easily eliminated. After they have broken through the skin, electro-desiccation is the method of choice, and if the base is boggy these lesions should be thoroughly desiccated and curetted right down to the healthy normal tissue at all margins and at the base and then be x-rayed.

Bloodgood used to say that a beautiful woman never had cancer of the face. Many thought he was radical. He simply meant that those who take good care of the skin have a pretty skin, and blemishes of this nature are never allowed to even make a start. We all know that much of this trouble can be averted, and even the advanced cases can be cleared up and recurrences held down to a minimum by taking proper care of the skin—by having the patient wash the skin with castile soap and warm water thoroughly and then rubbing on simple cold cream, over the entire exposed skin surface each night, and, if need be, each morning.

MEDICAL PROBLEMS INITIATED BY THE MOBILIZATION OF MAN-POWER*

By

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And

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The problem of adequate medical care for the sick and injured among those actively participating in the preparedness program of the present emergency has been thoroughly outlined by Major-General James C. Magee¹ and Irvin Abell.^{2, 3}

*Read before the Association in annual session, Mobile, April 15, 1941.

This paper in no way represents the opinion of the office of the Surgeon General of the Army.

1. Magee, J. C.: Medical Preparedness for the Present Emergency, Mississippi Doctor 18: 546-550 (March) '41.

2. Abell, Irvin: Medicine in the National Defense Program, South. Surgeon 10: 225-233 (April) '41.

3. Idem: The 1940-41 Military Training Program: Participation of the Medical Department of the Army, J. A. M. A. 115: 2003-2005 (Dec. 7) '40.

Naturally, the medical profession of the entire country is interested in the defense program, particularly, that part related to medicine. The medical care of our present day soldier, as he prepares for a war "to be" or "not to be," is no more difficult or different than the care the same soldier would require in civil life except that epidemics of the common infectious diseases occur where a large number of men are congregated. Articles are now beginning to appear in the literature on war surgery. However, this paper will not embrace the handling of potential hazards that we, who are at present on active duty, might be called upon to treat. Aside from rendering professional care to the soldiers in the various training camps, another mobilization problem confronts the American physician which might appear trivial at first, but also might have far reaching effects on just how good the Army we are building is going to be, and that is the physical condition of the selectee. Is he able to serve full military duty for one year with the U. S. Army and then be placed in the Reserve Corps for an additional ten years? Can he do full military duty without injury to his health? Can he do full duty with some defect that he has without becoming a burden to the government after his year is completed?

These are some of the problems facing many of the doctors of Alabama since I know that most of you, in one way or another, have some connection with your local draft board.

Brigadier-General Frederick F. Russell,⁴ in speaking of the prevention of casualties, had this to say: "The theory of prevention begins in the military service with the exclusion of those who can be predicted as early casualties. This means the detection of latent pulmonary tuberculosis by x-ray examination of the chest of every recruit, and the retention of the subject at home where he will go on to a cure, rather than to see him break down in military life. It means the complete weeding out of constitutional psychopaths, who are adjusted to their home environments but who could in no way face the stresses of the military services. These are the two great classes of the unfit that got into the services in the World War and

4. Idem: Contrast in Military Preparedness. Mil. Surgeon 88: 190-191 (Feb.) '41.

that are responsible for the major portion of the hospitalization load of the Veterans' Administration. They will get in again, to the great cost of the government, unless the examining boards are thoroughly aware of the pitfalls before them and competent for the task involved."

Since most civilian doctors have, as their only military connection in the preparedness program, examining selectees for the service, or serving the various draft boards in an advisory capacity, we thought perhaps it would be interesting to review some of the most common physical defects that render young men unfit for military service.

The following tables compare the most common physical defects found in the last war, 1917-18 (Table 1); in volunteers for the Regular Army before the Selective Service law became effective (Table 2); in a sample group of present day selectees (Table 3); in a sample group discharged from the Army on certificates of disability (Table 4); and in 1,000 university students (Table 5).

In 1917-18, 21 per cent of the drafted men were rejected because of physical defects. Table 1 lists the ten most common defects found in the World War draftees and also the percentage of occurrence in each deformity.

TABLE 1

Defects	Per Thousand, Total Men Drafted, 1917-18 ⁵	
Orthopedic impairments	213.16	32.2%
Eye defects	61.01	9.2%
Hernia	55.36	8.3%
Cardiovascular-renal diseases	50.20	7.5%
Venereal diseases	46.77	7.0%
Hypertrophic tonsillitis	33.77	5.1%
Underweight	31.14	4.7%
Deficient teeth	26.27	3.9%
Tuberculosis	24.77	3.7%
Mental diseases	24.53	3.7%

One of us, Leone,⁶ made a study of the physical records of 6,743 volunteers for the Regular Army in June, July and August of 1940 and among the 32.5 per cent rejected because of physical handicaps found the following defects to be the cause for rejections.

5. Idem: Physical Defects Among Drafted Men in the World War, J. A. M. A. 116: 316 (Jan. 25) '41.

6. Leone, George E.: Causes for Rejection for Entrance into the Regular Army Due to Physical Defect, J. A. M. A. 115: 1283-1284 (Oct. 12) '40.

TABLE 2

Teeth	516	23.0%
Eyes	479	21.0%
Height and weight	308	15.0%
Feet	213	10.0%
Ears	202	10.0%
Skeletal	77	3.5%
Genito-urinary	72	3.2%
Neuro-psychiatric	67	3.0%
Allergy	52	2.3%
Heart	33	1.5%

Captain Saslaw,⁷ Chief of Medical Induction, Camp Shelby, Mississippi, gave us the list of physical defects found in a sample group of 1,836 all white selectees examined here at the Induction Station in February 1941. There were 568 rejections, or 30.5 per cent.

TABLE 3

Flat feet	241	45.9%
Hemorrhoids	36	6.3%
Defective vision	28	4.9%
Hernia	25	4.4%
Insufficient teeth	23	4.0%
Underweight	22	3.8%
Varicocele	16	2.9%
Ear defects	11	1.9%
Pilonidal cysts	9	1.7%
Varicose veins	9	1.7%

The following table shows the physical disabilities present in young men who were inducted into the Army but were unable to do full military duty, and have been discharged from the Army on certificates of disability because of these defects. The defects listed below were found in the first two hundred discharged from the Army here at the Station Hospital.

TABLE 4

Orthopedic impairments	52	26.0%
Asthma	19	9.5%
Genito-urinary	18	9.0%
Hernia	17	8.5%
Defective vision	15	7.5%
Epilepsy	15	7.5%
Otitis media	10	5.0%
Cardiovascular-renal diseases	8	4.0%
Nerve injury (old)	7	3.5%
Psychiatric	5	2.5%

Boynton⁸ studied the physical records of 1,000 college students who entered the University of Minnesota in the fall of 1939. She applied the physical standards set forth under the Selective Service Act and 18.6 per

cent were found unfit for military duty. Table 5 analyzes the defects found for comparison with the other groups.

TABLE 5

Underweight	55	29.5%
ENT defects	44	23.6%
Heart	28	15.0%
Speech defects	12	6.4%
Asthma	11	5.9%
Hernia	8	4.3%
Flat feet	5	2.6%
Defective vision	4	2.1%
Pulmonary tuberculosis	2	1.0%
Diabetes	2	1.0%

DISCUSSION

The defects found in the youth of our country twenty-three years ago are still present in the youth of our country today, whether he be already in the Army, a college student, a volunteer, or a selectee. The physical defects do not occur in the same frequency in all of the groups. However, the more common ones are surprisingly constant. It is also interesting to note that the men in the different groups were not confined to one state or locality, as those in Table 2 were all from New York, those in Table 3 were all from Mississippi, and those in Table 5 were from Minnesota.

CONCLUSION

The common defects that render the selectee unfit for full military duty have been reviewed. The same defects are found quite constantly in the different groups in different sections of the country and should be ruled out on every selectee examined.

Hypertension in Pregnancy—From the viewpoint of practical medicine, it is important that those doing obstetric work should be familiar with the apparently predominant role of chronic hypertensive disease in the toxemias of late pregnancy and should make every effort to effect an early diagnosis. Carefully taken family and past histories will frequently give a clue and obesity should put a physician on his guard. Hypertension appearing before the third trimester of pregnancy, with or without albuminuria and edema, elevation of the blood pressure which persists for more than one week after delivery, cardiac enlargement or palpable peripheral arteries, are valuable signs. Ophthalmoscopic examination is, however, necessary for the earliest possible diagnosis and should be carried out by an expert who is familiar with the normal size and contour of the retinal arteries.—*Plass, Texas State J. Med. July '41.*

7. Saslaw, Milton S.: Personal communication (complete report to be published).

8. Boynton, Ruth E.: The Health of the College Student and National Defense, J. A. M. A. 116: 787-789 (Feb. 22) '41.

THE REPARATIVE POWER OF BONE* **AN ENCOURAGEMENT TO CONSERVATISM** **IN THE TREATMENT OF COMPLICATED** **FRACTURES OF THE EXTREMITIES**

REPORT OF CASE

By

R. S. HILL, M. D.

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When I was admitted to the practice of medicine fifty years ago, traumatic surgery constituted the greater part of surgical practice in the comparatively small urban community such as was Montgomery at that time. And during the first half of my professional life, it was my privilege to see quite a number of bone injuries, thus giving me an opportunity of personally observing the reparative power of bone. Notwithstanding my latter years have been devoted chiefly to other fields of surgery, I have not lost my interest in bone injuries—particularly those of the extremities.

Doubtless, the great majority of amputations for injuries 40 or 50 years ago would be wholly unjustifiable in this day of surgical achievement. Surgery has indeed advanced a long way in my time, thanks to Joseph Lister who gave us the principles of surgical cleanliness; which, in the perfection of application, has lifted compound fractures from the radicalism of amputation, with a mortality of 70 to 80 per cent from sepsis, to a gratifying conservatism, with a saving of limbs at a minimum danger to life. It was through fear of a compound fracture and its consequences, not special surgical accomplishment, that Pott's fracture got its name. Percival Pott, an 18th century surgeon of St. Bartholomew's Hospital, fell and sustained this injury, and, as he lay on the ground, fought off with his walking cane well wishers who rushed to lift him up, fearing they might convert the simple into a compound fracture, which would necessitate amputation, with its preantiseptic 80 per cent mortality. A window shutter was secured, Pott was gently placed on it and carried by hand across London Bridge to a hospital for treatment. He was ever lame thereafter. From this instance the profession "fell" to calling the injury Pott's fracture. As a matter of fact, the severest bone injuries today, with-

in themselves, rarely necessitate amputation, and extensive injuries with much destruction of soft tissues of an extremity do not justify a hasty and rash condemnation of a limb for amputation. Many of the worst appearing of these latter, in experienced and capable hands, will respond surprisingly well to conservative efforts.

Sir Frederick Banting, recently killed in an aeroplane accident, when a young doctor serving in World War No. 1, was wounded in the arm, and on being told it was necessary to amputate the arm to save his life replied, "I am going to keep that arm," and keep it he did. Some years later it came in good use when, angered with Dr. C. for calling insulin (the product of Banting and Best's labors in 1921) "C.'s Extract," Banting jumped aboard of him, throwing him down and as he bumped his head against the floor, exclaimed, "So you will call this C.'s Extract, will you?" This ended Dr. C.'s efforts to attach his name to the discovery of insulin. A one-armed or defective armed man could hardly have accomplished so much.

Notwithstanding the present day gratifying possibilities of conservative limb surgery, I have a feeling that there are still too many limbs cut off, because the profession in general does not consider fractures of the extremities and their complications with the seriousness that is their due. Consequently, physicians fail to acquire a proper knowledge of their management.

Dr. Cohn of New Orleans (in an able article, "Controversial Questions in the Management of Fractures," published in the Southern Medical Journal, August 1939) says:

"Fractures are untreated early in some clinics because of the lack of interest in the subject on the part of the staff men assigned to emergency duty. Fractures are untreated at times because the proper treatment is time consuming. Patients are seen who have not had a primary reduction. Board splints have in some instances been applied. Such treatment is equivalent to that which may have been done by a Boy Scout. There is a necessity for the profession to become fracture conscious before an unpleasant public consciousness forces certain realities upon us. Our medical curriculum must devote more time to this old and important branch of surgery."

*Read before the Association in annual session, Mobile, April 16, 1941.

This is a severe indictment of the profession for an indifference towards the treatment of fractures. Though I am a little reluctant to fully concur in what Dr. Cohn says, nevertheless, I recognize this able surgeon's opportunity for observation in this work, and, therefore, must treat with great respect any opinion expressed by him. In my judgment, a relatively large number of fractures, simple and compound, are treated by doctors, who, through choice or force of circumstances, extend their activities to practically every department of medical practice. Naturally, they are taxed to the utmost in keeping abreast with the rapidly unfolding knowledge of the common diseases that demand their attention, and, therefore, have little or no time to give to the study of less frequent conditions, such as fractures, that come under their care; and, consequently, many fractures are treated by mechanical instinct, unassisted by an adequate knowledge of the fundamental surgical problems involved. I do not depreciate the value of mechanical ingenuity in surgery, and particularly in limb fractures. However, without some understanding of the part played by muscle contraction or tension and their bone attachment in the displacement of broken ends of bone, one is at a disadvantage in securing adjustment and fixation, with a minimum of manipulation. Without a knowledge of the power of bone tissue to restore with its kind a loss by traumatism and of complicating infection, one is incapable of wisely choosing between conservatism, with patient and intelligent treatment on the one hand, and radicalism (amputation) with loss of limb on the other. Likewise is this latter true in the presence of severe injuries to the soft parts. In the resulting mental confusion, amputation, as the easiest, simplest and quickest way out, will probably be the course pursued; and a limb lost that might have been saved by one better prepared for this work.

In closing this reference to the advantage of educational preparedness in treating fracture, may I recall a bit of history of an interesting family illustrative of the fact that what can be done in surgery by mechanical ingenuity can be better done by mechanical ingenuity combined with scientific surgical knowledge.

Dr. H. O. Thomas was of the 8th genera-

tion of a noted family of bone setters of England, but, qualifying as a doctor, he combined "the traditional experience of his family with anatomical knowledge," and devised very creditable splints and measures for the successful treatment of limb fractures. Living in the slums of Liverpool with his father, a bone setter and he himself possessing marked prejudicial eccentricities, he did not receive the professional recognition his work so richly entitled him to enjoy, and then too, "A prophet is not without honor save in his own country." Not until Robert Jones, the nephew of Thomas, took up the work of the uncle, and combining it with scientific surgical knowledge, made of himself a great orthopedic surgeon; and as such, in World War No. 1, properly credited to the deceased (1834-1891) uncle many of the means and methods he was using. Yes, not until then did the name of the latter (Thomas) receive the recognition that was denied him in life.

I wish now to report a case that began as a simple fracture of the thigh, became an open-plated, infected fracture, with great, almost disastrous destruction of bone; and, finally, through the wonderful reparative and restorative power of bone tissue, made a perfectly beautiful physical and functional recovery.

The patient, L. W., a boy 8 years old, was a little undersized, anemic and neurotic, with an ungovernable temper and a fixed resolve that he would do nothing his attendants wanted done. He was brought to the hospital, October 23, 1934, shortly after sustaining a fractured femur by being struck by an automobile, and his doctor called me in consultation. Though the skin was unbroken, yet from the nature of the accident and piece of bone detached from the shaft, as well as the feel of the parts, we were of the opinion that the soft tissue had been severely injured.

By strong extension under general anesthesia (local anesthesia was out of the question because of the boy's rebellious disposition) to overcome the muscle contraction, very little manipulation was required to secure a satisfactory apposition.

The financial condition of the parents and the rebellious disposition of the boy seemed to make inexpedient any method of fixation that would confine him to the hospital or

that he could possibly disarrange. Therefore, plaster of Paris was applied to the limb, extending from his toes to and around the pelvis. The patient was taken home to be attended there by his physician. A week or ten days later he was returned to the hospital for an x-ray check up, which showed a recurrence of the displacements of the fractured ends.

Again I was called in consultation and it was agreed to plate the fracture. This was done under strict asepsis and required a minimum handling of bone and soft tissue. Plaster of Paris was reapplied, extending again from the toes to and around the lower part of the body. The apposition between the ends of the bone was perfect, as shown in Fig. 1.

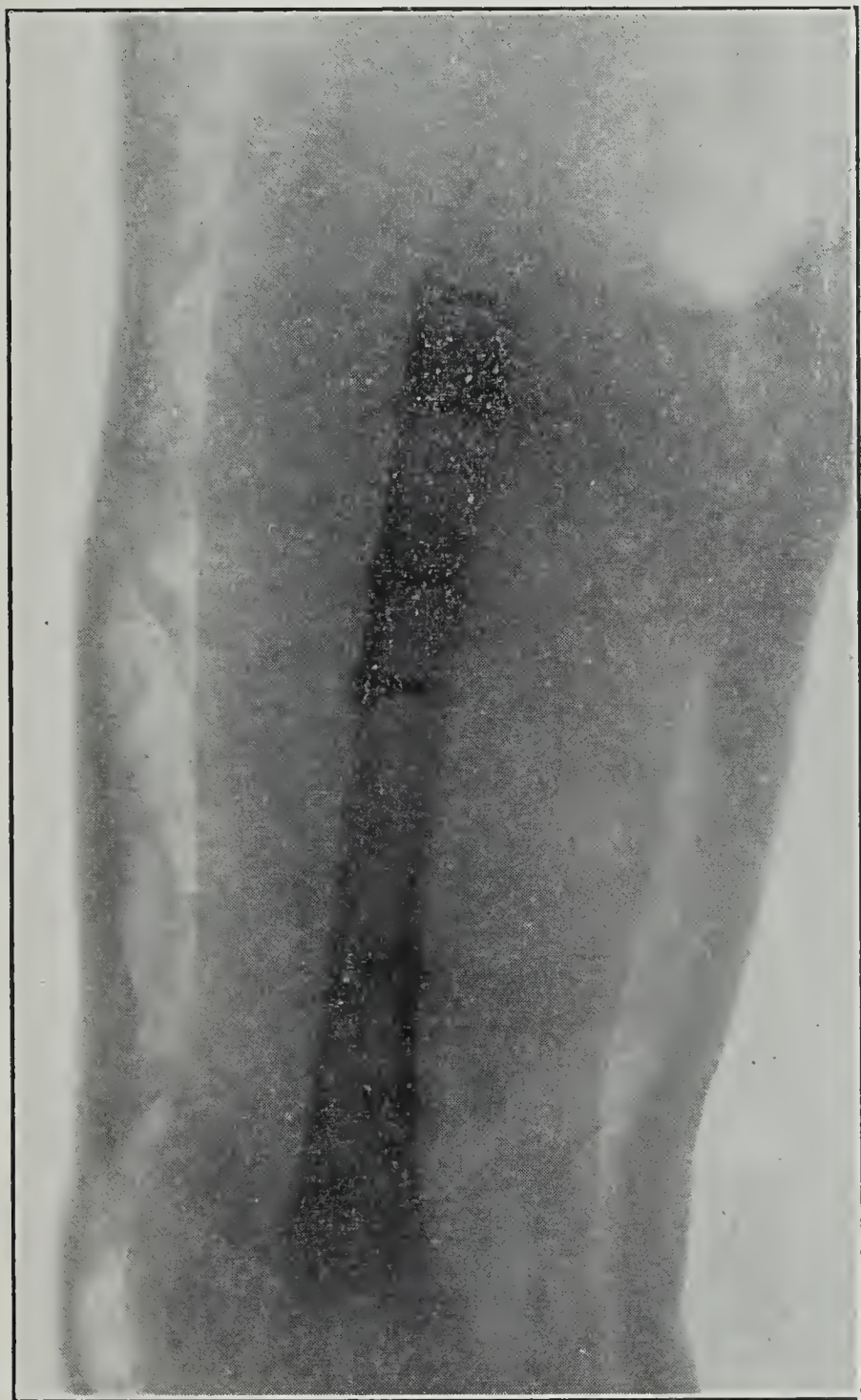


Figure 1

The boy was again taken home and in 7 or 8 weeks brought back by his physician, with a profuse purulent discharge from a fistulous tract in the wound and a distressingly

severe destruction of bone as shown in Figures 2 and 3.

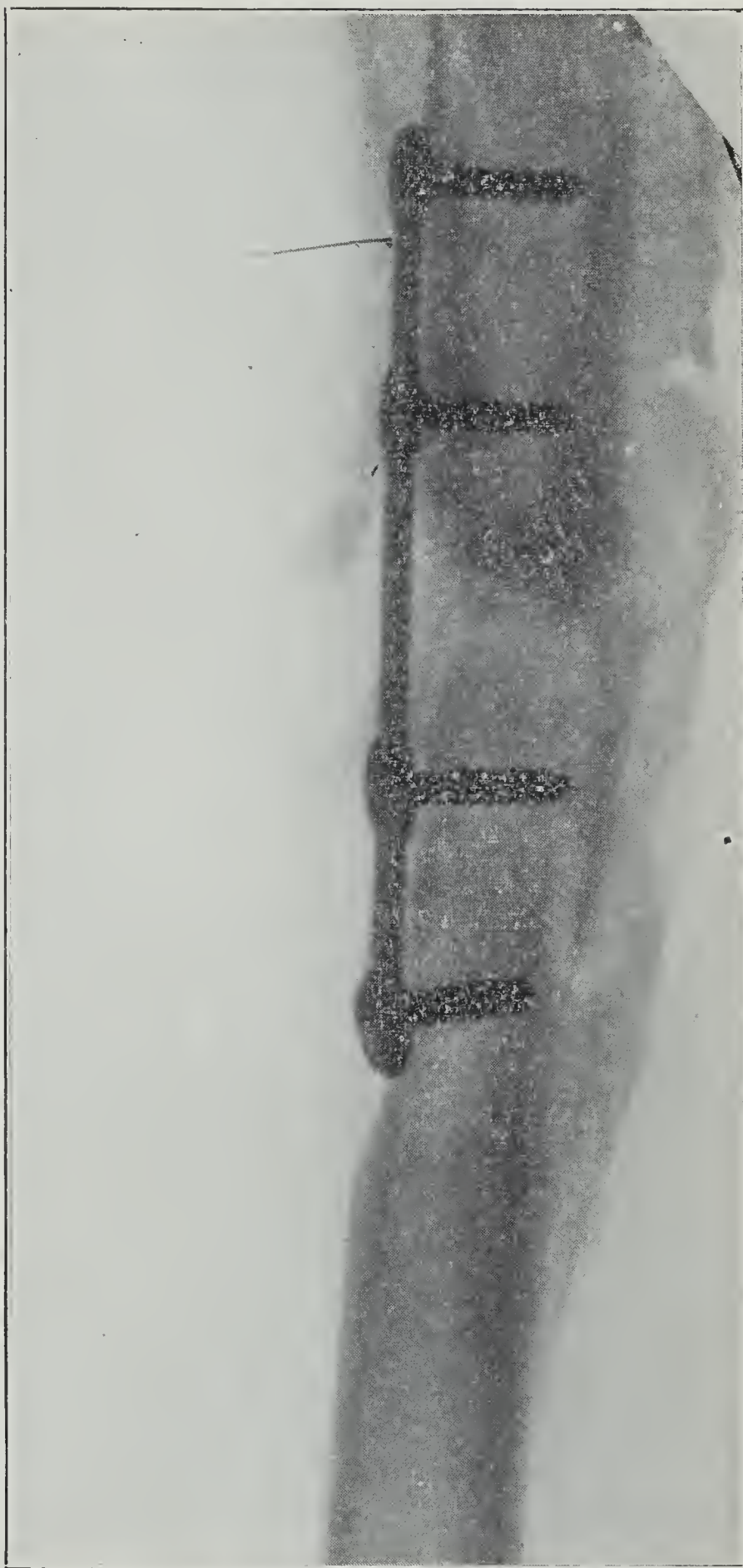


Figure 2

I was advised that when the infection showed up, within ten days after he returned home, a window was cut in the plaster cast and the doctor undertook to keep the parts clean by syringing the fistulous tract with an antiseptic solution. When the x-ray revealed the wretched condition of the bone, the doctor asked that I take charge of the patient.

Leaving the patient for the present, let us turn our attention briefly to open fixation of fractures. At the outset, I have no hesitancy

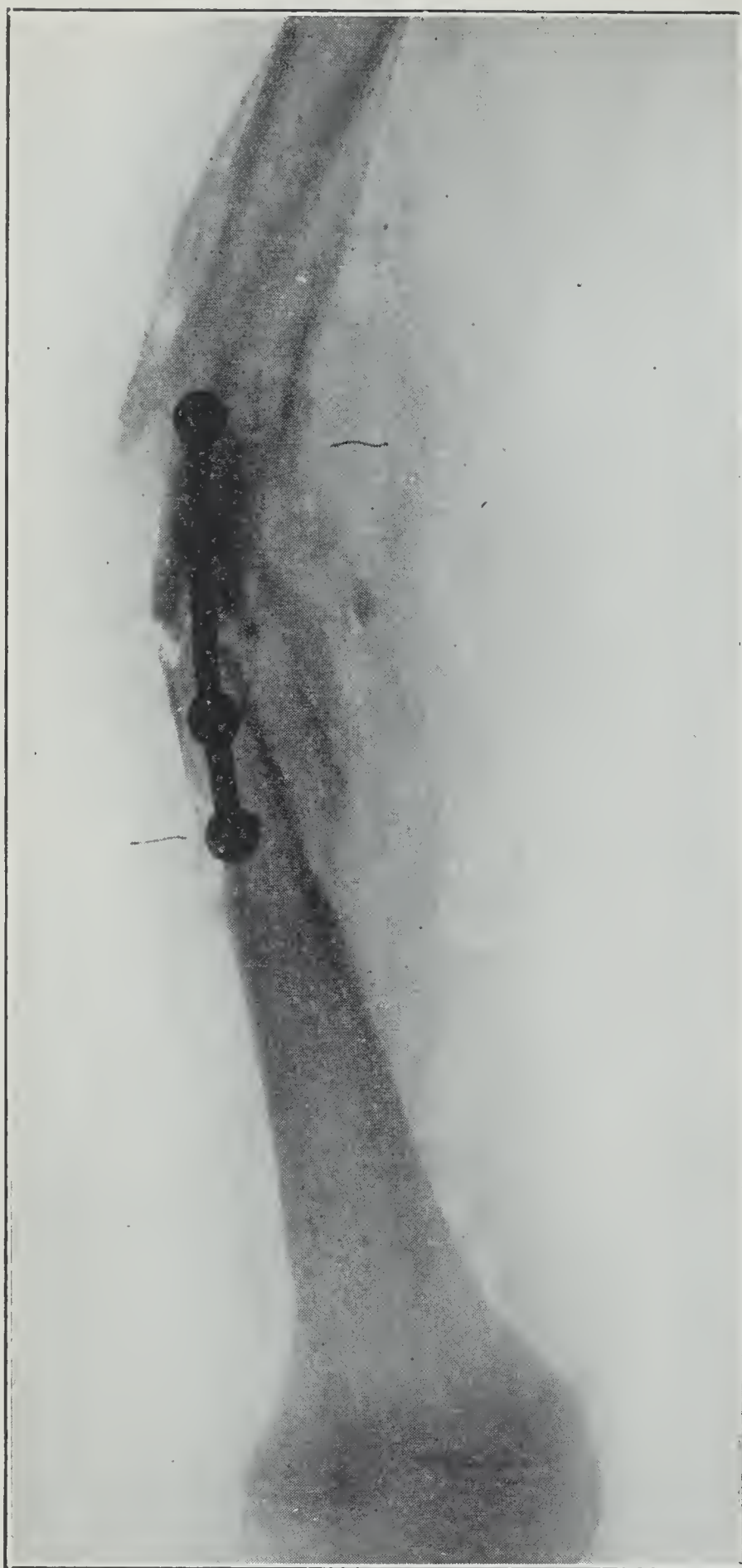


Figure 3

in saying that I seriously doubt if any metal with iron in it, such as was used in this case and that has been so long and often used by many capable surgeons, has proven or will prove generally satisfactory. I am inclined to believe that when a ferrous metal is used, Warbasse and Smyth (Surgical Treatment, vol. 7, p. 467) are not far from wrong in declaring "the published results of the treatment of fractures by the use of buried metal plates are admirable. The unpublished results are horrible." Experience seems to prove beyond question that ferrous metal is very irritating to bone tissue, causes the

absorption of lime salts—resulting in the loosening of screws—a distinct retardation of repair, and, finally, through a local accumulation of fluid and a lowering of tissue vitality, furnishes a fertile field for infection with its trail of evil consequences. Figures 2 and 3 show loosened screws and lack of the formation of new bone under and immediately around the metal plates. It is my firm conviction that, if a ferrous metal is used, it should be removed within 2 or 3 weeks in the absence of infection and immediately if infection shows up. Its removal is easy, as the absorption of the lime salts in the bone loosens the screws and whatever new bone may have formed will be on the side of the shaft opposite to that to which the plate is fixed, and, therefore, will be no hindrance to the plate and screws being lifted out. If there has been no new bone formed within 2 or 3 weeks, particularly in children, to hold together with reasonable firmness the fractured ends, there will not be sufficient grounds for expecting future bone repair to justify the risk of allowing the ferrous material to remain longer in place. Even though no new bone has been formed in 2 or 3 weeks, when the metal is removed, the changes in the surrounding soft tissues, will, in all probability, give sufficient support to the approximated fractured ends to insure their continuation with a proper fixation apparatus applied to the limb.

Dr. D. M. Cameron, at the Staff Meeting of the Mayo Clinic, September 1940, made a very encouraging report on the use during the last three years of vitallium in their fracture work. Vitallium is composed of 65 per cent cobalt, 30 per cent chromium and 5 per cent molybdenum, and, Cameron claims, is not irritating to either bone or soft tissues, causes no absorption of lime salts in the bone, and, consequently, no loosening of screws nor retardation of bone repair. (Stellite is very similar to vitallium in composition but has a trace of iron and carbon.) In 1937, Cameron says the Mayo Clinic began an occasional use of vitallium. In three years it has been used 53 times in non-complicated fractures. In the same three years, iron-containing metal (mostly vanadium steel) was used in 50 of the same class of patients. In the latter, there was a primary discharge (a discharge free from infection) in 26 per cent and a secondary or infected discharge

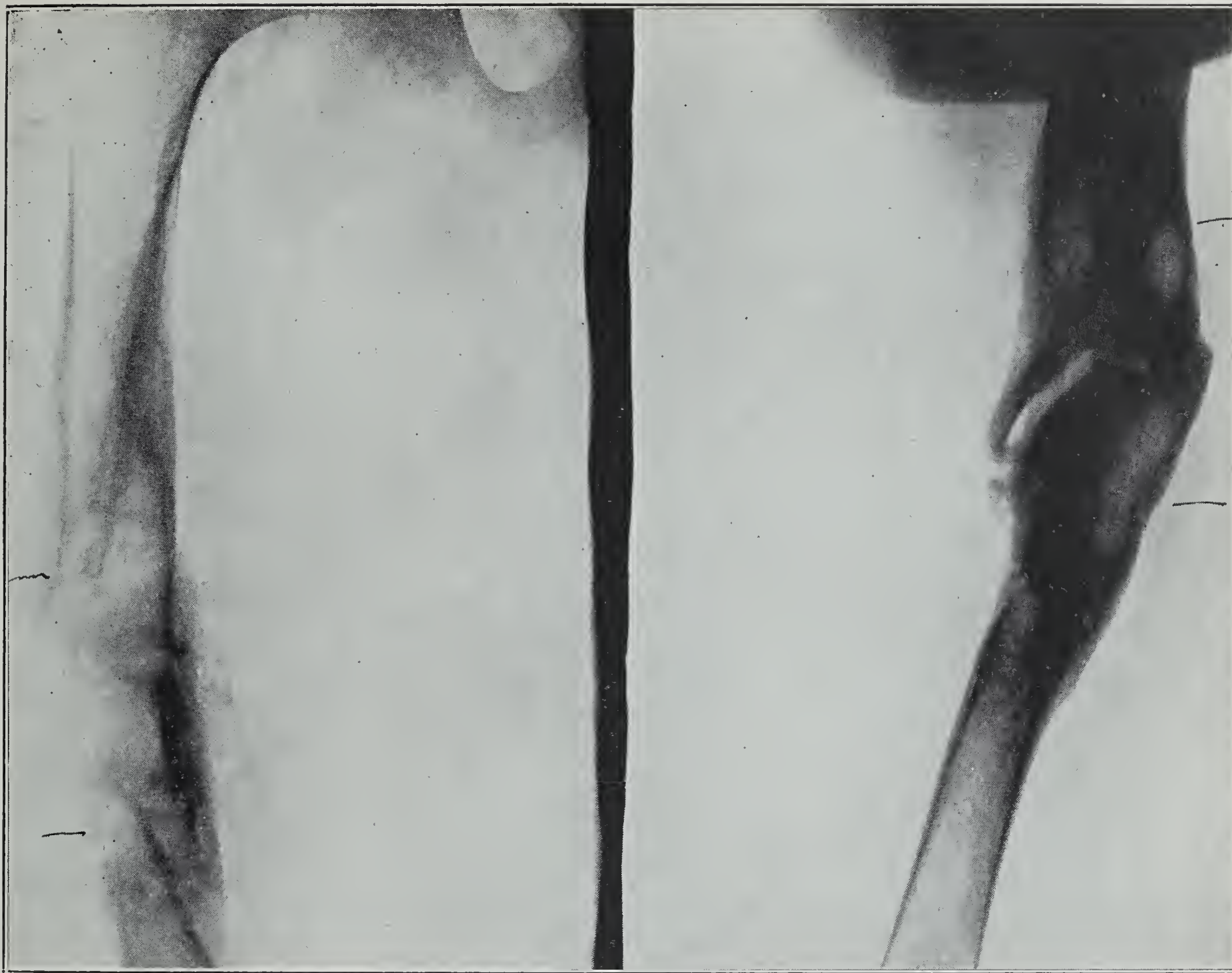


Figure 4

in 4.4 per cent. In the 53 cases in which vitallium was used, there was a primary discharge in 7.5 per cent and no secondary or infected discharge whatever. In other words, primary (non-infectious) discharge was approximately 4 times more frequent with the use of ferrous material than with the non-ferrous vitallium and there was no infection in the 53 vitallium cases, though 4.4 per cent of infection in the 50 cases in which a ferrous material was used. It is obvious that a 4.4 per cent infection following an open fixation of a simple fracture is far from satisfactory. In a number of cases, says Henderson of the Clinic, in which the vitallium was removed after it had served its purpose, "there was no evidence of irritation to surrounding bone or soft tissue. Nor were the screws loose or any discoloration of the metal." Henderson concludes by saying (Section on Orthopedic Surgery of the Clinic) that "we have scrapped all other metal plates, screws and nails in our hospital and now have only vi-

tallium." The reports of Cameron and Henderson support the earlier contention of Venable and Stuck of San Antonio, who, in 1936, introduced vitallium in fracture surgery as "a metal with adequate strength and non-irritating to bone or soft tissue."

If future experience sustains (and I prefer believing it will) reports we have on the use of vitallium, we have in it a metal that can be used in fractures with a satisfactory sense of security and for which the profession owes Venable and Stuck a debt of gratitude. However, as a non-absorbable foreign substance, it seems to me that sound surgical practice dictates its removal after it has served its purpose, say 5 weeks in children and 10 in adults. Autogenous bone grafts would seem very acceptable in this work, but I do not believe they give the strength and firmness desired in fractures of long bones, requiring direct mechanical support to the approximated ends. It seems to me



Figure 5

their place is chiefly for spanning a gap due to loss of bone tissue and in non-union cases.

Tying together broken ends of bone with absorbable material is easily done and will serve well in those cases in which not much force is required to maintain the approximation when once it has been made. The necessity of observing the strictest asepsis whenever a simple fracture is to be converted into an open fracture cannot be overemphasized.

May I say here I have an impression that too frequent and injudicious use of the x-ray during the reparative process may have a deleterious and retarding effect on the embryonic cells which are active in the repair and thereby delay this process.

Returning to the patient: Under general anesthesia, the diseased area was laid wide open, the plate and screws were lifted out, and all dead bone which could be removed without much disturbance of any tissue reparative efforts was taken out. The infected cavity was cleaned as carefully as possible,

swabbed with tincture of iodine, and then filled with iodoform gauze. The external dressing having been applied, the leg was placed in as near a normal position as possible and, under strong extension to overcome the muscular contraction, a heavy plaster cast, reinforced with metal plates, was put on, extending from his toes to and over the lower part of the body. The metal reinforcement permitted the removal, without too great a weakening of the cast, of a large section of the plaster over the diseased area to give an ample opening for the proper care of the wound.

The dressings were changed frequently to prevent any pus accumulation, and from time to time dead bone becoming loosened was removed with little or no irritation. Within ten days or two weeks a full section of bone two inches long (Figures 2 and 3) was taken out. We wished to give nature full opportunity to repair the damage, and, if it failed, to maintain the leg in as near normal position as possible until the soft tissue

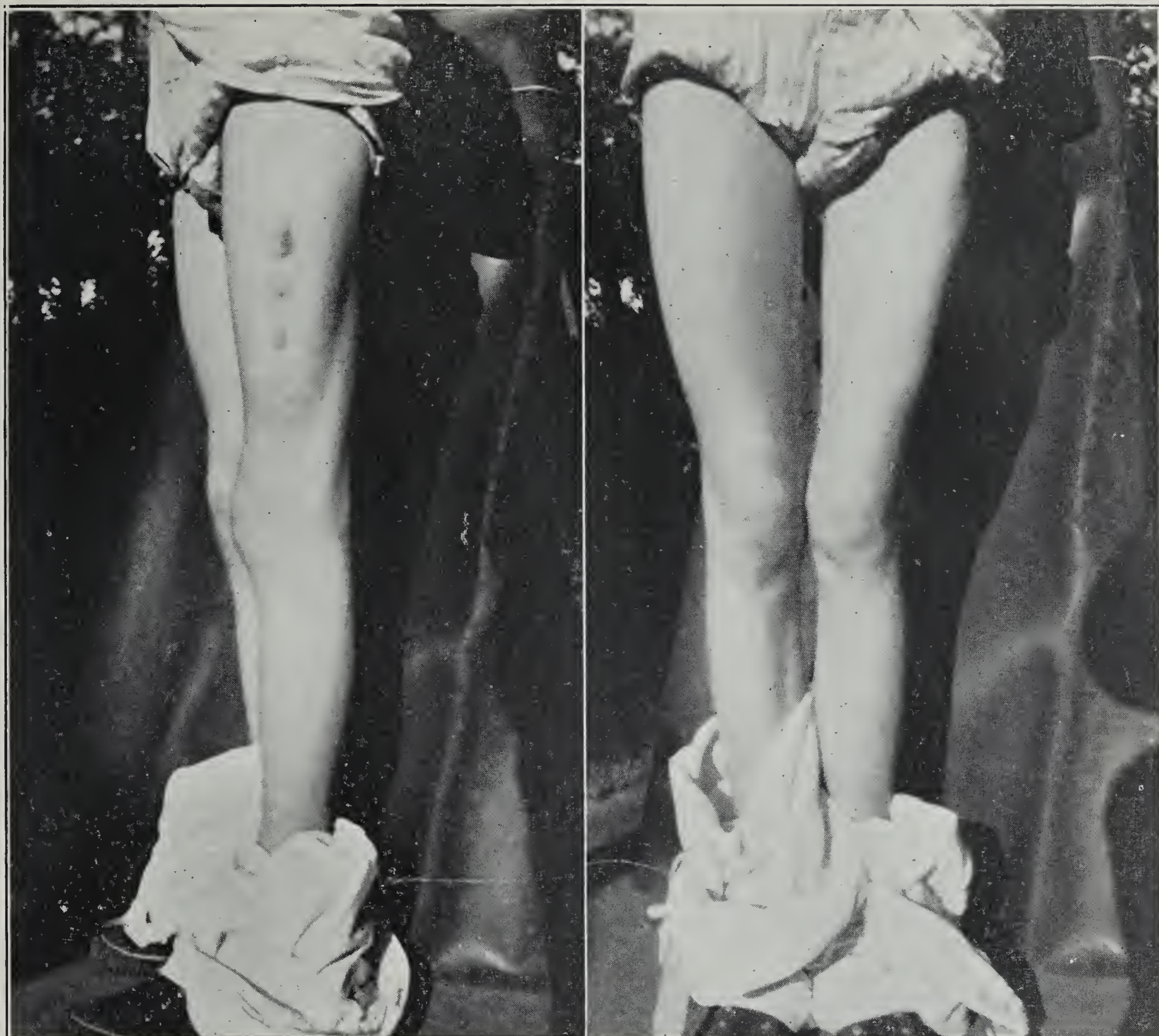


Figure 6

had completely healed, and we felt warranted in spanning the gap between the ends of the bone with an autogenous graft. In 4 or 5 weeks it was clearly evident that new bone was replacing that which had been destroyed. At the end of three months the wound had practically healed (the healing was retarded by the occasional passage of spicules of dead bone). The cast was taken off and the x-ray showed the condition as seen in Fig. 4.

It will be observed that though there is an abundance of new bone, there is, however, none on the side on which the metal plate and screws were placed. The new bone is firmly attached to the upper end of the lower segment of the shaft, and less perfectly attached to the lower end of the upper seg-

ment. There is also a greater curve in the shaft than is desirable.

Though experience justified a sanguine expectation that the curve in time would become less, nevertheless, with the purpose of assisting in attaining this end, a leather supporting cuff was made to be laced on the thigh to give greater safety to the patient, as he, with an elevated shoe on the normal limb, was placed on crutches to get the benefit of the weight of the impaired limb in straightening the curve.

It is very gratifying to be able to report that, during this little fellow's stay in the hospital, his general health improved, his irritable and antagonistic disposition disappeared, and he became thoroughly cooperative in his treatment. Today he is one of the

best boys of my acquaintance. He used his crutches six months and the leather cuff about a year.

Fig. 5 shows the condition of the femur 5 years after his accident. Any weakening that may have existed because of the slight curve in the bone has been taken care of by an increase in the thickening of the bone, as seen in an antero-posterior x-ray view. In this strengthening of the bone we have a beautiful confirmation of Wolff's law, which, as I understand it, is that bone will conform its structure to the future needs and requirements of its location.

The diminished and slight curve in the bone does not show in the leg, neither is there any shortening nor impairment in its function (Fig. 6).

In conclusion, may I say if the report of this case contributes in any measure to conservatism and care in the management of injuries of the extremities, of every degree of severity, it will have justified its place on your program.

DISCUSSION

Dr. Earle Conwell (Birmingham)—I agree with Dr. Hill that bone surgery has made rapid and even revolutionary advances, not only in the last 25 years but even in the last 10 years. As a matter of fact, Lord Lister and Sir Percival Potts would even be amazed to see what changes have taken place since their day, but with all of the advances and the aids of science we must ever be conscious of the necessity and the ability of the human body to repair itself. Such ability should not be abused and nature should always be aided. This means not only the constitutional condition of the patient but the local repair as well.

It is gratifying to know that not only limbs will be saved but lives as well by good conscientious surgical judgment. The rapidly increasing number of injuries from the automobile is making our responsibility greater every day. It is important that we emphasize the necessity for the proper early treatment in all injuries, first aid being of great importance. Treat them where they lie and early attention to the individual and the local injury are important.

Nothing is truer and more important than Dr. Hill's statement about the treatment of a fracture not being entirely a mechanical one. The physiology and pathology of bone and its repair are some of the most important fundamental branches of surgery. The mechanics in the treatment of fractures is a mere incident as compared to the physiology and the repair of bone and local tissue.

Open reduction should be done in a certain percent of fracture cases and it constitutes good surgical judgment if done when indicated. However, it is not always the cutting which makes a

good surgeon; it is the judgment as to when to do or not to do the cutting which is best.

Rarely is open reduction indicated in children. Rarely, when open reduction is done, should one get an infection. Traction and suspension and their equivalents will in many instances prevent open reduction and prolonged disabilities.

As previously stated, regardless of the internal fixation method used, asepsis is always necessary. This does not necessarily mean the Lane technique. The duration of operation is an important factor as far as infection is concerned. In well selected cases of open reductions, infection should not take place. Vitallium or stainless steel or their equivalent are superior to most all types of internal fixative agents. Bone grafts are indicated in certain cases; seldom is catgut fixation alone indicated.

The more modern aids in preventing infection in compound fractures are the local use of sulfanilamide and sulfathiazole. There is no doubt but these drugs have their place. I am sure that we have seen many cases where there has been too much meddling by the surgeon, and, in spite of this, good results have been obtained and our only statement following such repair is "Ain't Nature Grand?"

Dr. W. C. Hannon (Mobile)—I have read Dr. Hill's paper with a great deal of interest, and it is in keeping with the present trend in reference to injuries of the extremities, which has resulted in the saving of many limbs and good functional end results.

Fractures demand so much detail in their care and proper treatment to a successful conclusion that they have resolved themselves almost into a special field of medicine. In reviewing the history of fractures for the last few decades, it seems that there has been a cycle of events, swinging from radicalism to conservatism and from conservatism to the present stage of a semi-radical affair.

With the advent of refined x-ray technique, anatomical position of fragments has assumed an important role, which in the past was not given all consideration and even under those circumstances many excellent functional end results were obtained. There may be times when the x-ray is misleading, but I believe that it should receive thorough cognizance as an index to future healing, functional result and other factors attendant upon the care of such cases. This embodies, of course, a thorough anatomy of the parts, muscular attachments with opposing pull, and other physical features that have to do with lines of gravity, secondary changes in the adjacent joints, and other factors which will not be given in any detail at this time.

In considering the case report of Dr. Hill, primary reduction of fractures of long bones in children the age of his patient is ideal and their adequate immobilization tends to terminate in an excellent result. There are times, however, when such a procedure is not possible by the closed method and in those cases I believe that the control of this disposition to dislocate after reduction may be conservatively maintained by skeletal traction. Injury to the epiphysis on such occa-

sions is most important and need not be elaborated on at this time other than to mention it in passing. An objection may be immediately raised that such a procedure in children may prove a hardship and relatively hard to control, but in my experience this has not been the case, as I have found it quite comfortable and well tolerated. The plating of fractures in children of this age is not a routine procedure, but I am sure there are instances where it is perfectly justifiable as in the case under discussion. Unfortunately, however, it has been my duty to remove many of these plates, with the postoperative osteomyelitis and the care of the long convalescence subsequent to such an accident. I am inclined to confine fixation by foreign material more or less to the adult, and I fear that the tendency at this time seems to indicate a rather promiscuous use of this form of therapy. Of course, new metals and alloys are in the process of perfection, which will minimize the amount of electrolytic process and consequent loss of bone erosion and absorption around the plates and screws; and we hope will finally eventuate in a perfectly inert substance producing no local or general reaction whatsoever.

The role of bone regeneration in young growing children fortunately is great, and this power of bone proliferation springing from the osteoclasts is derived from the periosteum and chiefly the endosteum and probably to a lesser degree from the hard cortical bone. Of course, adequate circulation and the preservation of such are essential factors. Apposition of bone fragments is of prime importance, but in such cases as the Doctor reported, with separation of the fragments, often a frame work is supplied by tissue between the fragments over which the bone forms and gradually meets and merges into a solid shaft, and at such times dormant osteogenetic cells are present, derived from bone chips, strands of periosteum, etc. In the presence of an osteomyelitis, a simultaneous process will occur as sequestration and bone proliferation. Undoubtedly the type of bone infection resulting from this case was not that of the blood stream type, which is primarily a myelitis, with suppuration and rupture through the cortical bone to the periosteum, with secondary stripping and, finally, the formation of the involucrum and the sequestrum. The infection usually following bone plates occurs in the bed of the screws and is more or less limited to the area of operation.

It is interesting to note that sometimes, under the most ideal conditions with excellent bone approximation and efficient immobilization, non-union will result; and, in cases of extensive osteomyelitis, that this very infection has acted as a stimulant to new bone formation, which probably may have been a factor in this case. Much experimental work has been done in bone proliferation in animals and on humans, and out of this vast field of investigation definite conclusions have been drawn which embody a consideration of a general infection, such as lues, the intervention of soft tissue, and the relationship of certain hormones and basic bone pathology, either hereditary or acquired. A good example

for consideration may be seen in the pseudoarthrosis of the long bones in children in which these lesions have never healed, even in the presence of autogenous bone grafts, which are difficult in children. Recently some success has been afforded by these grafts being taken from the parents.

In conclusion, I would like to state that the Doctor's paper has been well presented and has afforded grounds for considerable thought in the care of fractures with a tendency towards the conservative side and he is to be congratulated on the end result obtained.

MALARIA IN AN ENDEMIC AREA

ITS CONTROL BY TREATMENT

By

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And

EDGAR C. FONDE', M. D.

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MALARIA IN THE ENDEMIC AREA

The control of malaria is mainly a clinical problem. The object of this discussion is to show that endemic malaria can and should be controlled by a prolonged plan of treatment of those individuals who are the sources of infection to others. While drainage of anopheles-breeding areas, and screening and other public health means are useful, the eventual solution of this problem lies in a proper support of the biologic laws governing the natural limitation of disease. The subject now to be considered extends far beyond that of the victims of malaria, who constitute only a small percentage of the adult native population exposed to inoculation. The present discussion includes also those who escape the disease, and those who ultimately establish an adequate resistance to it. The plan of treatment which we propose is based precisely upon the biologic principles governing immunity and susceptibility.*

Universal inoculation is practically incapable in an endemic area where the anopheles mosquito and human malaria coexist, especially during warm seasons. The results of repeated inoculations are two-

*It is conceivable that in the hyperendemic regions, where more prolonged warm seasons favor the sexual cycle of the malaria organism in the mosquito vector, different results would be expected from the transmission of parasites in greater volume and increased virulence.

fold: in a great majority, individual resistance is progressively increased; in a smaller number of persons, however, resistance is decreased. The diminished resistance is apparent in chronic cases whose malaria is indefinitely prolonged, while in those individuals presenting evidence of a maintained arrest of the disease, after recurrent attacks during the first two decades of life, we find tangible evidence of the development of an adequate resistance. In support of this concept we wish to point to the unavoidable and repeated exposure to inoculations, sooner or later, of *all* persons within the households occupied by malaria cases, on the neighboring premises, and at week-end recreation points, generally favorable to mosquito propagation. We have only to consider the results of exposure of individuals to the same mosquitoes under natural living conditions and compare them with the overabundance of "controls"; we can only correctly conclude that the number of inoculated persons who escape the disease in its chronic forms is far greater than the number of inoculated persons who develop it. These facts become particularly evident when one's observation has extended over a long period of time, sufficient to cover several generations in the same families, or other individuals who may subsequently occupy the same or neighboring houses. A broader perspective of malaria as a public health problem has thus been made possible, particularly for the senior author whose contact with the various special groups comprising the entire population extends over four decades.

Let us consider several different classes of individuals, observed over this long period of time. These groups will be taken up in the order of their susceptibility to the disease.

The first and most important group is composed of young children and adolescents, except those of the negro race. Children who are victims of chronic malaria have generally been subject to recurring attacks of early malaria with typical symptoms throughout childhood, while during adolescence they have as a rule manifested symptoms less characteristic, finally atypical and more "masked" and varied in their nature. It is especially important to note that the disease holds its course and persists

notwithstanding the employment of the so-called short-term or the standardized methods¹ of treatment; the former is simply palliative, controlling in reality nothing but the symptoms of an acute attack; the latter standardized plan of treatment lasts eight weeks which is insufficient. Both of these plans of treatment fail to prevent the recurrence of attacks in chronic cases. They fail to alter more than temporarily the persistent course of the disease.

After passing through the adolescent period and attaining the vigor of maturity, a much larger number of those having manifested symptoms during their first two decades can go on to establish an adequate resistance. It is in this fact of a naturally acquired immunity that we find the greatest significance for determining a prolonged plan of treatment.

The second group, composed of the so-called unacclimated persons, is the most susceptible to both the acute and chronic forms of malaria. These individuals strikingly manifest the most virulent symptoms, and are subject to malaria in all its clinical forms; and especially from these are derived a large proportion of the persistent chronic cases with masked symptoms. This is particularly observed where there are large groups of newly exposed persons bringing about a combination of circumstances which invites the stepping up in virulence to a high degree. It is probably this situation which explains the occurrence of epidemics frequently reported in railroad and lumber camps,² sometimes far north of the usual malarial zones.

Next in order of susceptibility are the individuals whose general vitality has been abruptly lowered, as for example following the acute infectious diseases, operations, childbirth and lactation, hemorrhage, overexposure to the exhausting effects of cold, heat, sun, water, and even moderate exposures to the stimulating effects of the x-ray. We have often noted the activating effect of the roentgen ray upon afebrile chronic malaria in the production of a violent and febrile exacerbation. It is also interesting to note that the old-school clinicians and med-

1. Craig, Charles F.: The "Short-Term" Treatment of Malarial Infections with Quinine, *Am. J. Trop. Med.* 20: 239-240 (March) '40.

2. Geiger, J. C., and Gray, J. P.: *Pub. Health Rep.* 46: 516-518 (March 6) '31.

ical teachers of the South advised, as a general indication, that quinine be given in prophylactic doses during the first ten days of the puerperium in order to prevent the development of malaria. The same procedure was recommended in *known* cases of malaria presenting evidence of general lowered state of health not otherwise accounted for. This principle of support of the vital forces is involved in the plan of treatment here advocated. Such cases of abruptly lowered vitality would be a source of transmission to others unless safeguarded by treatment. Here again is support of our contention that recognized cases of malaria require a prolonged plan of treatment for their own protection and for the protection of others against mosquito transmission.

Having considered children and adolescents, unacclimated persons, and subjects whose general health has been abruptly lowered, we now turn our attention to those groups who have developed a strong natural resistance to malaria.

First come the members of the negro race, except those definitely debilitated. Notwithstanding statistics³ which often report a higher percentage of parasite demonstrations among negro school children than among white, we have rarely observed typical symptoms in the more darkly colored negroes, or, perhaps better stated, in the more pure-blooded Africans. Malaria is neither as widespread nor as virulent in this race as in the white population. This fact may be interpreted as a better racial tolerance to the malaria parasite or as a sort of protective adjustment to the environment in the African forbears.

Second in point of resistance are the mature members of the white race who are obviously vigorous; and third, the attending physicians of a community. These groups, it will be observed, overlap each other and are separated here only to emphasize the more inevitable and repeated direct exposure on the part of the physicians. There can be little doubt that the attending physicians are repeatedly bitten by the anopheles mosquitoes which feed upon their malaria patients. This is true regardless of the screening of homes with standard wire netting. Inquiry has been made by the writers

in regard to the malaria status of 110 physicians practicing in a community. Slightly less than 5 per cent were finding it necessary to resume their antimalaria treatment on account of seasonal recurrences or extra-seasonal disturbances. It cannot be denied that the mature members of the white race, in the native populations, especially the more constantly exposed physicians, have established a relatively successful resistance to the disease compared with the more susceptible groups mentioned. It is essential, we believe, that all subjects of chronic malaria be systematically listed, in order that they may be identified as subjects of malaria, and also that the atypical relapses may be better recognized and more promptly and effectively treated over a prolonged period. Especially is this made evident by the far greater number of atypical (masked) forms coming to consultation.

CONTROL OF MALARIA

The lesson to be gained from the foregoing analysis of the individuals comprising the general population exposed to inoculation is that the *maintained arrest* of the disease is accounted for by an adequate development of defensiveness inherent in the individual subject. This conclusion becomes particularly evident when we consider the far greater incidence of malaria in childhood and adolescence, and the morbidity, fatality and incapacitation resulting from malaria during the early decades. Such a relative immunity has long been noted, but has not been accorded, we believe, a position sufficiently important in the treatment plan for controlling the infection. In the following, we shall emphasize and assemble the principal therapeutic indications of treatment in the individual case which we believe to be the only *practical* means by which collective control may be accomplished. This is the fundamental point in the prolonged plan of treatment which we have advocated and put into practice.⁴ It may be otherwise expressed by stating that the first indication is to conserve and to cultivate the vital powers of defense in the patient.

For additional points of guidance in treatment, let us next examine some of the outstanding characteristics of the disease itself.

3. Coogle, C. P.: Pub. Health Rep. 42: 1683-1688 (June 24) '27.

4. Fonde', G. H., and Fonde', Edgar C.: Chronic Malaria, A Clinical Consideration, Arch. Int. Med. 64: 1156-1169 (Dec.) '39.

Considering the natural course of the disease, we note that there are three clinical phases to chronic malaria: the latent, the typical and the atypical. During each of these phases we comprehend the involvement of two widely different characters of tissue. First, the *localized* infection within the reticulo-endothelial cells in various systems; second, the *generalized* infection, with highly active schizogony taking place in the circulating hemocytes. The *constant* parasitic involvement in localized infection is represented by the fixed-cell habitat of the invading organisms. The recurring invasions of the blood stream, in general infection, is represented by the *transient* invasions which recur seasonally and extra-seasonally in the lowered general vitality of the subject. These recurrences tend to take place despite treatment, although they are promptly but only temporarily checked by the specific schizontocidal agents. Symptomatically, we find that the three well-defined phases rotate with the seasons. They constitute the inveterate relapsing characteristics.

In those cases undergoing a retrogressive course the symptoms occur with increasing frequency. The atypical phase is observed in a far greater number of cases coming to consultation, especially during the cooler months. In these cases, with a declining reactive defensiveness, the symptoms are more prolonged and tend to persist, while the symptoms become progressively less well-defined, less abrupt and less vigorous in character. General impairment of health often accompanied by the characteristic malaria cachexia develops, and finally the non-reactive phase results.*¹ On the other hand, cases tending toward recovery present more prolonged periods of the latent phase, a higher state of general vitality; their symptoms are much more frank and sharply defined, brief and vigorous.

We must now consider one of the most important developments in the course of ma-

laria. The so-called pernicious forms are typically manifested in the hyperpyrexial, the cerebral (comatose), the black-water and the algid forms. These abrupt phenomena may occur during the atypical phase,** or during the typical late phase.⁴ In no case have we observed such crises in the early stage of malaria. A history of preceding malaria attacks is more or less constant, and we have also especially noted the frequency of allergic symptoms. History of allergy in the preceding generation has often been observed. Such a high incidence, we believe, indicates that in the pernicious forms of malaria we may be dealing with examples of anaphylactoid crises.†

The variation in the so-called pernicious forms of malaria very probably depends upon the several degradation products resulting from destruction of the following living cells: the malaria organism itself, in the hyperpyrexial development; the red cells, in the black-water forms; and the white cells, in the abrupt lysis of these cells, resulting in grave leucopenia or agranulocytosis.⁵ The sudden occlusion of the circulation resulting from the allergic edema at the site of the "shock-tissue" in a given case may account for the varied symptoms,⁶ such as coma, paraplegia, algid syndromes with sudden collapse, and death. This would also account for many other syndromes beyond central nervous structures, such as ocular malaria, or certain skin eruptions, usually of intermittent or remittent character. The ever-mounting volumes of these devital proteins, consisting of malaria protein, hemolysin and endotheliolysin, periodically released⁷ coin-

**The atypical phase, according to the clinical interpretation by the present authors, is represented by the "septenary" periodic cycling of the parasites, and the masked symptomatology occurring abruptly at the segmentation time.

†Attention is called here to authoritative statements pertaining to "malarial paroxysms as manifestations of anaphylactoid shock".⁶

5. Fonde', Edgar C., and Fonde', G. H.: Allergy as the Direct Etiologic Factor in Malignant Granulopenia, A Clinical Study Based Upon One Fulminant Case, J. M. A. Alabama 31: 375-381, (May) '34.

6. Clark, H. C.: Recent Research on Medical Prophylaxis and Treatment of Malaria, in Year Book of General Medicine, 1938, p. 28.

7. Stitt, E. R.: Practical Bacteriology, Blood-Work and Animal Parasitology, ed. 7, Philadelphia, P. Blakiston's Son & Co., p. 416; also Malaria, Anaphylaxis and the Paroxysm, pp. 415-416.

*We have observed the symptoms of vitamin B deficiency in many cases of chronic malaria of long standing with a notable death rate attributable to pellagra. This holds true in a surprisingly large number of frank pellagrous cases despite availability of a proper diet. We believe this is due to inability on the part of such patients to take, or to properly assimilate, an adequate diet and possibly also to malarial damage to the digestive metabolic functions.

cidentally with the segmentation cycle,⁸ would account for the anaphylactoid crises* occurring in atopic individuals. In the non-atopic subject such very dangerous developments would not be expected to occur with the same frequency. This interpretation, if correct, should serve as an additional diagnostic lead in foreseeing and forestalling these possible critical developments. The old-school clinicians warned that the third paroxysm manifesting the high grade shocks, of grave appearance, would be fatal if not recognized and treated at once; they urged prompt and heroic dosage of quinine. Another symptom upon which great emphasis was placed consisted in the closing-up of the intervals between attacks. The abrupt seizures anticipate the regular time by two or more hours, while the duration of the attack is prolonged.

Reasoning purely upon the natural course of malaria, any treatment plan should take into consideration these fundamentally important biologic phenomena. First, there is an overwhelming toxemia from malaria discharges to which are added increasing volumes of hemolysin and endotheliolysin⁶ thrown off at the time of segmentation; second, further lowering of resistance to the existing infection takes place, with resulting greater susceptibility to superinfection and cross infections during the overthrow of the phagocytic competence existing in the latent phase;⁷ third, there is sudden exhaustion of

immune mechanism resulting from repeated hyper-reaction from anaphylactoid shocks and damage; fourth, there is a gradual exhaustion of the protective mechanism in the great majority of cases in the long and damaging course of chronic malaria.

Let us consider next the effectiveness of the specific schizontocidal agents and analyze their limitations. There is no fact better established in medical history, nor better demonstrated by microscopic proof today, than that of the response to specific treatment in all reactivated (symptomatic) forms of malaria. (Exceptions already stated in the non-reactive state and in pernicious crises.) On the other hand, equally well established by research authority as well as by clinical experience⁴ is the fact that, despite apparently skillful employment of the specific drugs, it has been proven impossible to eradicate the infection in the individual and in the community. "Neither treatment with quinine nor any of the new synthetic drugs, however intensive the treatment may be, is a 'therapia magna sterilisans.'"⁹

Notwithstanding the fact that malaria in its chronic form is generally regarded as one of the worst infectious blights on the race, it is, in the opinion of the authors, so effectively *controlled* by consistent and comprehensive treatment that few other diseases of serious nature, whether acute or chronic, offer better chance of recovery.

The advantage to be gained by the systematic classification and recording of *all* cases when once diagnosed reliably is a prerequisite in the control of malaria. This is true whether the diagnosis rests upon parasite demonstration or upon definite clinical proof. It would serve as a means of more general identification of the infected individuals, especially in the decidedly greater number of atypical or masked forms. Likewise, great advantage would accrue in the adoption of the "diary and calendar system"⁴ for securing the cooperation of the patient over a period of two or three years, in order to gain prompt clinical supervision as long as any evidence of activity or damage from the chronic disease may exist.

In view of the effectiveness of the schi-

8. Taliaferro, W. H., and Cannon, P. R.: The Cellular Reactions During Primary and Superinfections of Plasmodium Brasiliense in the Panamanian Monkey, J. Infect. Dis. 59: 72-125, July-August '36.

*This would explain also the inability to demonstrate the parasite in pernicious forms of malaria. It would also explain the age-old divergence of opinion among the most experienced physicians with malaria as to the danger or benefit of specific drugs after these crises.

Central nervous system disturbances caused by malaria are said by Durck to be caused by the formation of numerous nodules in the nerve tissue. These nodules result in irregular interruptions of the neurons, and neuropathologic symptom-complexes follow, variously recorded as polyneuritis, spastic spinal paralysis, herpes zoster, hemiplegia, apoplexy, paresis, psychic disturbances, bulbar paralysis and tetanic and epileptiform attacks. Seyforth's statistics reveal that 55% of all fatal malaria cases end in a coma preceded by numerous nervous manifestations.—(From "Relationship between Malaria and Epilepsy," in Year Book of General Medicine, 1939, p. 30.)

9. Sinton, J. A.: Investigation of the Radical Cure of Malaria Infections, Quart. Bull. Health Organ., League of Nations, 1935, p. 221.

zontocidal agents in eradicating the bloodstream infection, and in view of the equal effectiveness in arresting the progress and the disturbing factors in all active forms of malaria, attention becomes automatically focused at two points in the circuit of the parasite from man-to-mosquito-to-man. These points are, first, the localized foci within reticulo-endothelial cells; and second, the highly active cycling of parasites in the hemocytes of the general circulation. It is from these points that malaria begins its march to new foci in the individual and thus to the population at large. It is at these points of departure from the fixed foci in the human victims of malaria that the infection is most susceptible to arrest or to modification in the individual case and collectively in endemic areas.

INTERNAL FIXATION OF FRACTURES OF THE NECK OF THE FEMUR*

By

DRAYTON DOHERTY, M. D.

Selma, Alabama

In recent years, the management of fractures of the neck of the femur by internal fixation has been so standardized and so well accepted that one hesitates to present a paper on this subject. The results, both in regard to mortality and morbidity, are now generally recognized as being much more satisfactory by this method, and I do not see how one would question the advisability of adopting this procedure. The object of this paper is not to contribute anything new, as that would be extremely difficult, but merely to discuss the subject in general and to stress numerous important points in the handling of these patients.

In reviewing recent articles on the subject, in which large series of cases are analyzed, one is immediately struck with the marked improvement in results over the older methods of treatment. Whereas the former methods of external fixation yielded a mortality of about twenty-five per cent, with non-union in forty-nine per cent, the present figures are about nine per cent and twenty per cent, respectively. The all too common method of disregarding the fracture

completely, or the use of sand bags, yields a mortality of approximately eighty-five per cent.

In considering these figures, one must immediately realize that we are primarily attempting to save the life of the patient, as well as to obtain a serviceable leg. As ninety per cent of these fractures occur after the age of sixty years, one is again confronted with the seriousness of the situation. As many people of this age, or older, are already suffering from cardiovascular or renal disease, only a small number are seen as good surgical risks.

In reviewing the anatomy of the blood supply of the neck of the femur, the reason for such a high percentage of non-union is immediately obvious. The main sources of blood supply come through the capsule of the joint and through the neck itself. A small, more or less negligible vessel enters through the teres ligament. Thus, in fractures in which the neck is severed and the capsule is torn, the blood supply to the head is severely damaged. Thus an ideal situation for aseptic necrosis and resulting non-union is produced. It is also obvious that the closer the fracture occurs to the head, the poorer the blood supply, and, thus, the poorer the prognosis. Realizing this, we cannot hope for union to take place as occurs in fractures of the shaft of long bones, where we have two viable ends with the periosteum and the endosteum present. We cannot, therefore, say that a fracture of the neck of the femur unites, and should speak of it as a replacement rather than as a "union." It is felt that the head of the femur acts as a bone graft and is replaced by in-growth of vessels from the lateral fragment, with production of bone cells along the architecture of the old avascular head and absorption of the old head and replacement by a new one. It is possible and most probable, if proper reduction is not made and maintained early, that we may have a more rapid absorption than replacement, thus accounting for the "aseptic necrosis."

In considering the treatment of these patients, as shock is the most imminent feature when first seen, I feel that all possible means should be taken to prevent or to exaggerate this condition. First, it should be definitely stressed that some form of immobilization should be applied prior to trans-

*Read before the Association in annual session, Mobile, April 15, 1941.

portation. This is best accomplished by the application of a Thomas splint. All too frequently, we see cases that come to the hospital in a marked degree of shock from lack of any type of immobilization whatsoever. On arrival at the hospital a Thomas splint is applied immediately, and the usual methods of treating shock are administered. After reacting from the primary shock, preliminary x-ray examination is then made. It is our endeavor to operate on these patients within twenty-four hours after the shock has been combated. We feel that the continued or recurrent shock is due to the pain arising from muscle spasm and movements of the fragments. It is surprising to observe the contrast in comfort and in general improvement in the condition of these patients prior to and after internal fixation. I feel that there are few, if any, contraindications to internal fixation, as I have been, on many occasions, agreeably surprised to find our patients in better condition immediately following operation than before.

In regard to anesthesia, I use inhalation anesthesia in the better risks; however, the operative procedure can easily be accomplished under local anesthesia. Some operators advocate the use of spinal anesthesia, which is, evidently, equally as satisfactory.

Undoubtedly, the most important single factor in preventing non-union and restoring function is to obtain a completely anatomic reduction of the fracture. As mentioned above, the blood supply to the head is so scant that complete apposition of the fragments must be present to encourage the growth of new capillaries. Following manipulative reduction, results are checked by portable x-ray, both in the anterior-posterior and lateral planes. The operative procedure is not begun until satisfactory reduction is obtained.

For maintaining the accurate reposition of the fragments and their complete fixation, I, personally, prefer the non-electrolytic vitallium Smith-Peterson nail. Other operators prefer the use of Austin-Moore pins or lag screws, which are probably as satisfactory. I believe the feature of prime importance is the original accurate reduction and not the foreign body which maintains the reduction. I do feel, however, that the foreign body should be composed of vitallium, as advocated by Venable. Undoubtedly, the use of this

alloy has greatly increased the satisfactory results, due to its non-electrolytic properties preventing local areas of necrosis with consequent absorption of the bone surrounding the pin with resulting impaired stability.

In conclusion I should like to stress the importance of the following:

1. The marked improvement in mortality and morbidity with internal fixation, as compared to the so-called conservative methods of treatment.
2. Prevention of shock by satisfactory methods of temporary immobilization during transportation.
3. Early operation as a means of reducing mortality and preventing non-union.
4. Accurate reduction as the most important single factor.
5. The use of vitallium alloy, which is practically inert in the tissues.

Pulmonary Tuberculosis—In artificial pneumothorax, air is introduced into the pleural space between the lung surface and chest wall at regular weekly intervals; oftener after the initial injection, in order to collapse the diseased portion of the lung and to keep it collapsed until cavities are closed and healing has been accomplished. Artificial pneumothorax is best started in the sanatorium, but after a satisfactory collapse has been obtained, refills may be given by an ambulatory pneumothorax clinic or the outpatient department of the sanatorium. Ambulatory pneumothorax clinics are of value in rural areas where sanatoria and men trained in pneumothorax therapy are not available.

Artificial pneumothorax has its most valuable indication in moderately and far advanced cases, especially those with an open cavity and positive sputum. Pneumothorax may be unilateral or bilateral.

Although the technic of artificial pneumothorax is quite simple, there are certain important complications which may occur and these require treatment. They may be enumerated as follows: (1) Pleural effusion; (2) spontaneous pneumothorax; (3) air embolism; (4) pleural shock.

The ultimate objectives of artificial pneumothorax may be listed as follows: (1) Closure of cavities; (2) elimination of positive sputum; (3) control of symptoms; (4) arrest of both pulmonary and pleural disease; (5) restoration of patient's working ability.—*Musacchio, New Orleans M. & S. J., August 1941.*

<p>NEXT ANNUAL MEETING OF THE ASSOCIATION MONTGOMERY APRIL 14-16, 1942</p>
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GOUT

"Contrary to general belief, gout is fairly common in the United States; but it is frequently unrecognized. Most patients with gouty arthritis have their disease for several years and endure a number of attacks before a correct diagnosis is made. This is unfortunate, because, of the various articular diseases, acute gouty arthritis is one of the most responsive to treatment. Hence the most important point in the treatment of gout and gouty arthritis is its recognition."

The above are the opening lines of the recently published article by Hench¹ dealing with the diagnosis and treatment of this disease. The Rochester clinician asserts that "gout and gouty arthritis are not synonymous; the latter is merely the dominant symptom of gout. The arthritis and the other principal features of gout (hyperuricemia, tophi, late renal and cardiovascular complications) are only the outward signs of some underlying chemical or metabolic abnormality of which little is known." The first attack of gouty arthritis usually affects persons who are more than thirty-five or forty years old. It appears suddenly, lasts from three to ten or more days and disappears completely. In about 60 per cent of the cases a great toe is affected (podagra), though it

may affect an instep, ankle, knee or other peripheral joint, and the great toes may long be unaffected. "The second attack usually occurs after a year or so and may affect the joint previously involved or a new one; it may or may not be more severe and last longer than the first attack, and it also disappears completely. Sooner or later the tempo and severity of the disease generally increase; attacks may come semiannually (often in spring and fall) or more frequently. Early attacks are generally monarticular and afebrile; later attacks are often polyarticular and may be febrile."

"From three to forty (average twelve) years after the first attack the second great stage of articular gout occurs, that of chronic gouty arthritis, when the joints no longer recover completely but some stiffness, pain or deformity remains; in this stage acute exacerbations are superimposed on the residual chronic gouty arthritis."

Hench divides his diagnostic criteria of gout and gouty arthritis into twenty-one points, only some of which can be listed here because of limitations of space. He advises us to suspect gout when

"Acute arthritis suddenly develops after relatively trivial trauma, such as a walk of unaccustomed length, that from excessive sight seeing (exposition gout).

"Acute arthritis develops after dietary excesses of holidays, birthdays, lodge night, conventions and the like.

"Acute arthritis occurs while a patient is being given liver extract for anemia, mersalyl (salyrgan) for dropsy, ergotamine tartrate (gynergen) for migraine, a ketogenic regimen, thiamine hydrochloride (vitamin B₁), dehydrocholic acid (decholin) or insulin (rarely). These are the medicinal provocatives of gout.

"Be cautious about making a diagnosis of gout in females; gout rarely affects females but when it does so it affects them in the classic manner. About 95 to 98 per cent of cases of provable gout occur among males.

"Since olecranon bursitis is several times commoner in gout than in any other disease, suspect gout in patients who have it.

"When shoulders, hips or spine are acutely or chronically affected, make a diagnosis of gout with great caution and only on the basis of unmistakable signs of gout and of gouty

1. Hench, Philip S.: Gout and Gouty Arthritis, J. A. M. A. 116: 459 (Feb. 8) 1941.

arthritis elsewhere. . . . Gout does not tend to produce a rheumatism of the torso."

And we are further informed that "gout is not cured when the attack is over. Gout is a chronic disease for which treatment must be continued indefinitely in an attempt to prevent or postpone return of symptoms. Contrary to the belief of a few physicians that no regimen materially alters the 'relentless progress of gout,' most physicians believe that, by adhering faithfully to the interval treatment, the majority of patients can sharply modify the course of their disease, reduce the number and severity of attacks, prevent or reduce the likelihood of chronic gouty arthritis and avoid or postpone the late and sometimes fatal renal and cardiovascular complications."

Hench's consideration of this subject is thorough and well written and, coming from one of such eminence and experience, is bound to be authoritative. An excellent section on treatment is included, but is here excluded because the average practitioner knows more about the treatment of gout than he does of its diagnosis. It is certainly true that many physicians are not sufficiently "gout conscious" and this fact probably explains in good part why gout is generally thought to occur more rarely than it does. Now that the problem of arthritis in general is coming in for increasing study and research, it is to be hoped that gout will not be overlooked. For it is certain that if the profession becomes and remains alert to the menace of gout, particularly in its earlier stages, much suffering and disability will be prevented entirely or greatly lessened.

Committee Contributions

Maternal and Infant Welfare

MATERNAL DEATHS

Maternal deaths from hemorrhage, one of the four chief causes of death during the puerperal state, form the most difficult and formidable cases the practitioner is called upon to meet. This is particularly true when the case is confined in the home where facilities and help are almost unobtainable. It is significant that, despite the continued reduction of maternal deaths from other causes such as toxemia and sepsis, the num-

ber of deaths from hemorrhage remains almost unchanged.

Just because these cases can become so formidable, it behooves the practitioner to regard every evidence suggestive of impending hemorrhage with the greatest respect. Hospitalization, if possible, facilitates treatment of these cases but so often this is impossible.

Recently, the improved and greatly simplified methods of blood transfusion make it possible for the physician to administer whole blood in the home. Materials for typing are easily obtainable and this procedure, as well as cross matching, can be carried out in the physician's office. In localities where home deliveries are almost obligatory, some physicians routinely type all patients, merely drawing slightly more than is needed for the Kahn test and using this for typing.

At the present time blood transfusions represent a potent weapon in fighting the death rate from hemorrhage and their use should be much more widespread than at present.

Child Health Supervision—Public officials in the health field have about arrived at the realization that if the quality of child health services is to be maintained at a high level, there must be continuous supervision. This cannot be done solely by the administrator and surely not by the "arm chair" director. The services, on a full- or part-time basis, of the specialist to carry out this supervision must be employed. This is true not only because the future may see expansion into the field of medical care for the needy sick but also because the child health program is essentially a clinical one. The general practitioner bears and will continue to bear the brunt in the clinical program, but he needs the help and continuous supervision of the child specialist. Let the pediatricians and public health personnel guide the physician and lay people in these efforts. Many state departments have already added to their staffs such a consultant or adviser on a full- or part-time basis. Obviously for the county unit this will not always be practical but here again the county health officer will find himself more and more in the clinical field of medical care. I believe the days of the "arm chair" health officer are numbered. Beside his administrative duties he must also acquaint himself with the facts and technics of child health supervision. He must also have access to post-graduate courses where he may refresh himself in these technics. I believe that the training of health officers for rural areas should be directed more along clinical lines.—*Christie, Am. J. Pub. Health, July 1941.*

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

SPECIMENS EXAMINED

APRIL 1941

Examinations for diphtheria bacilli and Vincent's	697
Agglutination tests (typhoid, Brill's, undulant fever, etc.)	710
Typhoid cultures (blood, feces and urine) ...	912
Examinations for malaria	1,891
Examinations for intestinal parasites	4,984
Serologic tests for syphilis (blood and spinal fluid)	36,713
Darkfield examinations	35
Examinations for gonococci	2,246
Examinations for tubercle bacilli	2,036
Examinations for Negri bodies (microscopic)	51
Water examinations (bacteriologic)	966
Milk examinations	2,189
Pneumococcus typing	37
Miscellaneous	918
<hr/>	
Total	54,385

THICK BLOOD FILMS FOR MALARIA

In the laboratory examination for malaria, thin and thick films each has its own advantages and disadvantages.

Thin films are better suited for the examination of parasites and blood cells and therefore make differential diagnosis easier.

If the blood specimen contains but a few parasites it requires a long search to find them in a thin film. This may be true in the case of the carrier, in the initial stages of the fever, or if the patient has taken a dose of quinine on his own initiative before consulting a physician.

Thick film examinations have been shown by experience to frequently increase the number of positive findings by as much as 50 per cent. This is due to the fact that it concentrates a comparatively large amount of blood in a very small area, thus speeding up the examination as well as increasing the probability of finding the parasites if they are scarce. The experienced technician can examine 100 fields on a good thick film in 3 or 4 minutes, whereas at least 30 minutes would be required for an equal number of fields on a thin film. Hence the thick film method is the only feasible one for large scale investigations and is to be recommend-

ed as a supplement to the thin film in all cases.

Care is essential in the preparation of all blood films but is especially necessary in making thick films. Many preparations that are unsatisfactory for examination, due either to carelessness or ignorance on the part of the person making the film, are received in the laboratory each year. For this there is no excuse.

In making blood films it is essential that the blood be free from dirt coming from the skin, and from dust or other debris, since all these in stained films are very confusing to the examiner.

The proper technic in preparing thick films is as follows: Cleanse the skin with alcohol and gauze and rub dry, or allow the alcohol to evaporate (alcohol on the skin or needle will "fix" the red cells). Prick the skin deep enough to allow the blood to well up in a large drop under gentle pressure but not deep enough to cause excessive bleeding. Touch the slide to the crest of the drop of blood, draw a circle about the size of a dime on the slide with the blood, and fill in this circle by rotating the slide in the *top of the drop of blood*. *Avoid touching the skin in this process.*

Allow the blood film to dry in the air, being careful to lay the slide flat (so the blood will be evenly distributed) and to have it protected from flies and dust. If possible, let the blood continue to dry for 24 hours in order to assure sticking of the blood to the slide.

If several slides are to be sent to the laboratory, do not place together so that the films are in contact as this often results in the films sticking together.

Active Immunity to Tetanus—In the course of research and field trials, it has been found that tetanus toxoid may be combined with either diphtheria toxoid or typhoid vaccine and injected together. This may be done without detriment to the antigenic properties of either substance. Some investigators maintain that the effectiveness of each is actually increased by injection of such mixtures. In any event, one does not need to institute tetanus vaccination as a separate series of injections, and pediatricians, in one place or another, are taking advantage of this fact. The dose is one cubic centimeter, the number of doses from two to three, the time interval from one to six months.—*Am. J. Pub. Health.*

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

TRANSMISSION OF POLIOMYELITIS

The sharp increase in the number of cases of poliomyelitis reported from Florida, Georgia and Alabama since the first of June this year focuses attention on our knowledge of how this disease is spread. That it is communicable is generally accepted but as to the method there is no such agreement.

In a small proportion of cases a history of contact with a preceding case can be elicited but these are the exceptions. Ordinarily not the slightest connection can be obtained with previous infections. Frequently when multiple cases occur in a family the onsets are such as to suggest a common source of infection rather than spread from case to case in the household.

Healthy carriers are one means of explaining spread and that they play a part is generally accepted. The isolation of the virus from the stools of cases and contacts and from community sewage, however, has focused attention on the intestinal route, and at present sewage, water, milk and food are under suspicion. In addition to being able to infect monkeys through the nasal route they can be infected by feeding of the virus so that the possibility of human infection by swallowing the virus certainly exists. Epidemiologic studies of several outbreaks have pointed to milk as the source.

The supporters of the insect theory or that of the animal reservoir have not lost hope and certainly both of these sound very plausible in explaining the bizarre occurrence of cases. It may, of course, be that there are diverse methods of spread or that the disease is not due to a single virus. Experimental work is continuing and some day success may reward the investigators.

BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

HEALTH EDUCATION IN A RURAL COMMUNITY

The following article on Health Education in a Rural Community was written by Miss Bessie Mae Young, teacher in the Cold Springs School, Cullman County, Alabama. It may be noted that marked interest can be manifested in maternal care and community

health through cooperation when those concerned make united efforts.

Maternal care is a big problem in the Cold Springs Community. Its location and the lack of telephones and transportation make medical aid difficult to obtain. For this reason a large number of births in our community are attended by midwives or others not physicians. I might add that the economic status of our people also enters into this.

The state record for 1939 lists 61,289 births in Alabama with 21,017 mothers attended by midwives and others not physicians. Of these 61,289 births, 2,487 were stillbirths and 3,689 died under one year of age. There were 368 maternal deaths.

In Cullman County for the same year there were 1,178 live births. The following table is given to indicate the trend over a period of three years:

	1938	1939	1940
Infant deaths	75	43	70
Stillbirths	36	31	29
Maternal deaths	6	5	3
Births attended by midwives	112	96	127

Cold Springs is a part of Cullman County and from my observation in the community for four years, and from the community survey made in 1936-1937, this need is one of supreme importance. This survey revealed that 38 per cent of the homes had one or more deaths in the immediate family. Of these deaths, 54.2 per cent were under three years of age, and 56.8 per cent of this 54.2 per cent were stillbirths.

A limited program directed to the solution of certain phases of this problem has been attempted for the past three or four years. Some work along this line has been done for some time. The county health department, in cooperation with the school personnel, has sent us a nurse one day each month over a period of more than three years. She has had discussions with the high school girls on such problems as personal hygiene, maternal care, etc., on a very elementary basis. One year a mothers' club was organized in which the nurse gave lectures and demonstrations on prenatal care. Exhibits were brought out from the county health department, and the high school girls as well as the mothers were shown, and given an opportunity to study, the complete exhibit. These included proper maternal clothing, an infant layette, supplies for the baby, a crib for the baby, delivery supplies, toddler's clothes, and essential foods. Demonstrations have also been given in preparing a delivery bed for home use. The services our county health department render have been discussed so our mothers know what services are available from this unit. The addition of the home delivery nursing service to the county health department has meant much to the welfare of both mothers and infants in our county.

Some unit work, lasting over a period of two or more months for the past four years, has been done by each Senior III sociology class on love, courtship, marriage, and home. Health talks and guidance have been given to both boys and girls in sex education for the past four years.

This year, 1940-41, we felt we were ready to do more work on this problem. The school, through the cooperation of the health and physical education teachers, pupils, parents, and the county health department staff, has organized a club composed of Senior III girls, girls not in school, and young married girls. They have undertaken a more detailed study of maternal and infant care. A great deal of interest has been shown by this group composed of approximately twenty-four members.

The first meeting was held in October. A county health department nurse explained the work and the maternity services rendered by the health department personnel. Officers for the club were selected. Topics were suggested, by the members, for future discussion, and tuberculosis was chosen for discussion at the next meeting, with special emphasis to be placed upon its relation to maternity and child care as related to the community. One of the senior girls volunteered to lead the discussion and many good questions to be discussed were raised by the group; such as, "Can a mother with tuberculosis give it to her child before it is born?" "Is tuberculosis inherited?" "Should a baby whose mother has tuberculosis be allowed to nurse?" "How prevalent is tuberculosis in our community?" "What precautions should an expectant mother take as a safeguard against tuberculosis?" We had a motion picture on this disease brought to us from the health department. This picture was shown at one of our community night programs as one means of interpreting the problem to the general community.

The discussion for the third meeting held in December centered around colds, influenza and pneumonia. At this meeting two motion pictures were shown, one on colds, influenza and pneumonia, the other on foods. The entire school saw these pictures. The discussion of these films, which was in the form of a planned panel discussion, was left for the January meeting. This discussion was related to the care an expectant mother should take in avoiding these diseases. It was brought out that the expectant mother should rest, eat proper foods, and keep her resistance up during this time for her own sake as well as for the sake of the unborn child. The nurse told the girls she had a picture on Motherhood she would like them to see. They asked that it be shown at the February meeting.

During this period of development many problems arose. These included the lack of desirable material that would enrich and extend the scope of the study, ways and means of extending the study to larger groups in the school as a regular part of their study, and interpreting the extended program to the parents and community in general. These problems were discussed by the principal and county health officer, and it was decided that a conference of the personnel from the county departments of health and education should be called for the purpose of developing a more extensive and cooperative program on maternal and child hygiene. In order that such a program could have the official recognition of the State Departments of Health and Education,

the program was discussed and approved by both departments.

The health department cooperated in providing an experimental library consisting of approximately twenty books, fifty pamphlets and bulletins, ten films, and a variety of demonstration materials. Although the same group continued to be the nucleus of the study, an attempt was made to make the library available, under guidance, to all the senior high school pupils and the community (especially the parents of the children making use of the library).

Records were kept of all the reading done by each person using the books, and opportunity was provided for individual and group discussion of the problems and questions raised during their reading periods. A record of reading done by some of the group will be given later in this discussion.

The motion picture on Motherhood was used as a beginning of the February program. All the senior high school girls and boys had the opportunity of seeing the picture. The club members then met for a discussion which was led by the nurse. The picture evoked many comments and questions. "I never knew the enamel for the baby's teeth was laid down before birth." "I didn't know that if the mother didn't take food that would supply the materials for the needs of the developing baby these materials might be taken from the mother's teeth and bones and impair her health." One young married girl of this group who is now pregnant remarked, "How thankful I am that I have learned in time what I should try to eat and the care I should take to make my baby strong and healthy."

The group asked to take the Wassermann and the tuberculin tests at the meeting in March. This was agreed upon. There were twelve tests of each given. The report that has been returned showed all blood tests negative, eleven tuberculin negative and one positive. This girl has had an x-ray made. This was a valuable experience in developing a functional attitude toward health problems.

Home sanitation was the topic for April. This discussion was led by the county sanitation officer. The water supply, the toilet, and screening homes were given chief emphasis. Some girls asked the cost of installing pumps in their wells. Another wanted to know what was the best type of screen wire to buy.

Most of the girls have done extensive reading. They have been left to read silently and freely. Some of their reading has been discussed in groups. Most of it has been read with the understanding that if they come across things which raise questions or problems they do not understand, they are to come in small groups or individually and discuss them with guidance personnel which, in this case, was the county nurse and the health and physical education instructor. This seems to have worked as far as I can tell. The girls were very interested in this type of study program, so much so that they asked for it to be continued through the summer. The nurse has made her plans to meet with them. For the May meeting the girls decided to study venereal

diseases and asked the nurse to lead the discussion.

The library has been used by fifty-eight people. The cards show 168 names on the reading list of materials. Many more people probably read the material than the cards indicate, as the books could be checked out to be taken home where many members of the family could have access to them. The greatest amount of reading done by any one school girl was fourteen books and pamphlets. The greatest amount done by any one person not in school was five books and pamphlets. Being Born, by Strain, was read more than any other book. It totaled fifteen readings. Love and Marriage, by Galloway, and Growing Up, by De Schweinitz, were close seconds, having fourteen readings each. The booklets, How Life Goes On and On and The Age of Romance by Rice, were read more than any other booklets, each being read seventeen times.

The mothers and older women in the community have been shown the library when opportunity was available. No mother has visited the room without having the chance to look it over. The finest attitude has been shown. One mother said, "I am so glad my girl is getting this training." Another said, "I think this is fine; I am so glad this is being done." The girls have had the nicest attitude, so wholesome and clean. As far as I know only one mother has assumed a poor attitude. She sent word not to let her girls read any more of "them books on births." If she heard of them reading them she would punish them. She said she had had enough "young uns" to teach her girls all there was to be known about it. It was suggested to the daughter who told me what her mother said not to read any more since her mother felt like that. However, I observed the daughter did continue to read after then. I made no further comment about it, and I did not hear any. On the whole the materials were received and accepted by our girls and women in a most commendable manner.

No boy has checked out any of this material. There are several probable reasons for this. First, the material was placed in the room where the girls met for their class work. Second, the men teachers did not feel the need for the boys to read it or else felt they were not ready for it. Getting Ready to be a Father, by Corbin, was read by a dozen girls but no boys. As I see it this program must be a coeducational one if it is to be most effective. I would suggest that if this material or similar material is in our school next year it be placed where the boys who wish to read it may feel free to do so. It would be fine if more faculty members could read and get more familiar with the material.

I would like to thank the county and state department personnel and my own principal and community for trusting me with so great an undertaking. I am deeply indebted to them for this opportunity. I feel it has great possibilities, and I would like to have the privilege of doing more work in this field. I now feel I have a better understanding myself and as this program is carried forward I trust the health and welfare of our girls, our mothers and our babies will be im-

proved. As a school we wish to thank those who have aided us and inspired us in this work. We appreciate your cooperation and interest.

BUREAU OF SANITATION

D. S. Abell, M. S. in S. E., Director

AQUATIC VEGETATION

ITS RELATION TO MALARIA CONTROL

Contributed By

J. L. Crockett, Jr., M. S. in S. E.
Assistant Sanitary Engineer

Some of the typical breeding areas for the *Anopheles quadrimaculatus* mosquito, the sole vector of malaria in Alabama, are permanent or artificial ponds and ditches which have been invaded by vegetation. The principal role of vegetation is to offer protection to the eggs and larvae of mosquitoes from their natural enemies. This protection is in the form of leaves, stems, and fallen blossoms which penetrate or float on the water's surface. These may also act as an anchorage for other flotage and debris. Flotage and vegetation in ponds are comparable to the dense cover of forests which serve as habitat for wild game. We know that, other factors being equal, animals and birds are found in areas where protection from their enemies is offered. Similarly, we may expect that production of mosquitoes will be greatest where aquatic vegetation and flotage are abundant.

Vegetation not only protects mosquito larvae from their natural enemies but also makes the mechanical control of mosquito breeding difficult. A dense growth of aquatic vegetation serves as a barrier to larvicides, preventing to a great extent the spread of films of oil, and minimizes the effect of wave action.

The shallow areas of all ponds are subject to invasion by aquatic plants. These plants may be propagated by the seeds, rootstocks, and, in some cases, segments of the plant itself. These are carried from one pond to another by the droppings of birds or transfer of fish, or they may have been present in the basin prior to the creation of the pond. However, in too many cases, aquatic plants are introduced into a pond by the owner for beautification purposes or because of the conception that these plants are an aid to fish production. It is much better to plant flowers and shrubs in a garden where they

can be enjoyed without the nuisance and likely transmission of malaria that accompanies the breeding of the *Anopheles quadrimaculatus* mosquito. Recent experiments have proved the larger water plants, such as water mosses, water lilies, and pond weeds, to be of little value in fish culture. In fact most of them have been found to be detrimental.

An axiom for the control of anopheline mosquitoes is: "Keep the vegetation out of the water or keep the water out of the vegetation." In the case of the large impoundages, this is a physical impossibility and other methods of mosquito control must be resorted to. In smaller ponds, such as fish and stock ponds which are usually only a few acres in size, this physical state can often be secured. The site of fish or recreational ponds in most cases may be arbitrarily selected. In choosing a location for a pond it is best to select one that will have very little water less than one foot deep. If impossible to do this, it is advisable that the shallow area be filled in or excavated so that a greater depth may be obtained. This will aid in keeping down growths of water plants, weeds, and bushes. An area already invaded by aquatic and semi-aquatic vegetation should be avoided. It will be difficult to prevent rapid spreading of plants in the pond unless the growth of these plants is eradicated before impounding the pond. This would require extensive preparation, such as the cultivation of the area for one or more seasons or the use of poisonous chemicals.

The growth of most aquatic plants in small ponds can be controlled if not allowed to become thoroughly established. They should be removed as soon as they appear and care should be taken to pull out as much of the root system as possible. This will not insure against regrowths but will greatly minimize the work that will be necessary in the future. Growths of submergent vegetation, such as waterweeds and water mosses, have been eliminated by the fertilization of ponds for the purpose of fish culture. Fertilization is not considered to be a cure-all for all species of aquatic vegetation, but it is believed to be effective against submergent vegetation when applied in the manner recommended for fish production. When a pond becomes choked with plants such as

water lilies, cattails, water shield, and water milfoil, it is practically impossible to remove them without completely draining the pond and cultivating the area for at least one summer.

The control of aquatic plants in a body of water will minimize the production of anopheline mosquitoes and greatly reduce the difficulty and expense of mosquito control. In view of this, it is important that malaria workers become familiar with the plants associated with mosquito production so that they may be in a position to give advice as to their control and elimination.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1941		
	May	June	Estimated Expectancy June
Typhoid	5	8	46
Typhus	16	19	29
Malaria	263	399	515
Smallpox	0	1	2
Measles	1946	510	306
Scarlet fever	81	30	30
Whooping cough	339	169	195
Diphtheria	24	21	35
Influenza	180	38	48
Mumps	516	101	51
Poliomyelitis	2	14	5
Encephalitis	0	0	2
Chickenpox	98	39	44
Tetanus	3	2	6
Tuberculosis	328	269	265
Pellagra	31	32	82
Meningitis	5	3	6
Pneumonia	287	147	122
Ophthalmia neonatorum	1	0	1
Trachoma	0	0	0
Tularemia	5	2	0
Undulant fever	3	4	5
Dengue	0	0	0
Amebic dysentery	1	0	0
Cancer	152	147	0
Rabies—Human cases	0	0	0
Positive animal heads	16	18	

*As reported by physicians and including deaths not reported as cases.
The Estimated Expectancy represents the median incidence of the past nine years.

Woman's Auxiliary

Mrs. F. C. Smith, Chairman
Press and Publicity Committee

The Jefferson County Medical Auxiliary is still active through the summer months, giving a summer vacation to an underprivileged boy at Sky High Camp on Double Oak Mountain.

* * *

As the time draws near for Auxiliaries to become active again, the State Chairman, Mrs. D. H. Sparks, would like to stress the

importance of Hygeia. The doctors are not behind this magazine as they should be and just why we do not know. This is a most popular magazine among the laity and should be in every school and library, as well as in every doctor's waiting room.

* * *

At the recent meeting of the American Medical Association in Cleveland, Dr. Morris Fishbein, speaking to the Medical Auxiliary, asked that the women concentrate on nutrition and the health of our people after the war.

Help can be given through Hygeia so every Auxiliary should see that it is in all the schools and all libraries.

War Medicine

SAYS FEDERAL AGENCY TO SELECT DEFENSE DOCTORS BADLY NEEDED

"WAR MEDICINE" URGES PROMPT ESTABLISHMENT OF CENTRAL AUTHORITY FOR PROCUREMENT AND ASSIGNMENT OF PHYSICIANS

In the interests of national defense, the establishment at the earliest possible moment of a Federal agency for the procurement and assignment of physicians for military, civilian and industrial service is urged in an editorial in the July-August issue of War Medicine, published bimonthly by the American Medical Association, Chicago, in cooperation with the Division of Medical Sciences of the National Research Council, Washington, D. C. The editorial says:

"At the Annual Session of the American Medical Association held in Cleveland in June 1941, the Committee on Medical Preparedness (of the Association) brought to the House of Delegates a resolution urging the establishment of a central agency, to be known as the Procurement and Assignment Agency, which would enable the government to select more promptly and more wisely those physicians necessary for military, civilian and industrial service. The text of this resolution is as follows:

"Whereas, The President of the United States has declared that we are in a state of unlimited national emergency, and the Surgeon General of the United States Army requested the American Medical Association in June 1940 at the Annual Session to aid in the procurement of the necessary personnel for an army of 1,500,000 men; and

"Whereas, The American Medical Association established a Committee on Medical Prepared-

ness, which has now on hand the records of approximately 150,000 physicians as well as a statement as to their training, experience and specialization; and

"Whereas, The sudden entrance of the United States into a war might immediately require the services not only of the physicians already called to duty but of a very considerable additional number; and

"Whereas, Neither the American Medical Association nor any other civilian agency has the responsibility or the authority for the selection of those physicians who would be necessary for immediate duty and who would be called from civilian practice into service with the military agencies; therefore be it

"Resolved, That the United States government be urged to plan and arrange immediately for the establishment of a central authority, with representatives of the civilian medical profession, to be known as the Procurement and Assignment Agency for physicians for the Army, Navy and Public Health Service and for the civilian and industrial needs of the nation.

"This recommendation is made to avoid or minimize confusion and the inevitable delay which would result from the lack of such an arrangement. It is further recommended by the Committee on Medical Preparedness that if this resolution is approved by the House of Delegates a copy of it be sent to the President of the United States, the Secretary of War, the Secretary of the Navy, the Chairman of the Senate and the House Committee on Military Affairs, the Administrator of the Federal Security Agency, the Surgeons General of the Army, the Navy and the Public Health Service, the Adjutant General of the Army and the Health and Medical Committee.

"Subsequently this resolution was endorsed by the Health and Medical Committee, which has been assigned to the (Federal) Coordinator for Health Welfare and Related Activities.

"In all the warring nations the problem of medical personnel is prominent. Articles in British medical journals frequently reflect the difficulty of maintaining in Great Britain the social medical system, which includes the physicians who carry on the panel practice, of supplying industries with the innumerable physicians required under present regulations and of giving medical attention to the Army, the Navy, the Royal Air Force and the civilian defense groups. A note from Germany indicates that because of the depletion of the medical profession by emigration and the needs of the military services there are now some areas in which there is available only 1 physician to every 4,500 people.

"Already it is apparent that the procurement and assignment of physicians in the

United States for some of the innumerable calls which are likely to be made on them in the near future are going to be a task that will take the best available information and organizational ability. Apparently the needs for medical personnel which must be supplied are about as follows:

1. The United States Army Medical Corps and the United States Army Medical Reserve Corps.
2. The United States Navy Medical Corps and the United States Navy Medical Reserve Corps.
3. Physicians for the United States Public Health Service.
4. Physicians for the Selective Service Administration, including local boards and appeal boards.
5. Physicians for civilian medical service.
6. Physicians for aid to Britain, requested by the American Red Cross.
7. Physicians for industrial medicine.
8. Physicians for service in rehabilitation.
9. Physicians for civilian defense organization.
10. Physicians for state and county medical and public health organizations.
11. Physicians for medical divisions in other government services.

"Already the American Medical Association has available on a punch card system the names of more than 160,000 American physicians licensed to practice, with complete information regarding their ability and availability for many different types of medical service. Nevertheless, the utilization of this material must await the establishment of some agency capable of acting with authority for purposes of procurement and assignment of physicians in times of emergency.

"After the session of the House of Delegates of the American Medical Association the resolution here quoted was sent to the various persons and the committee who are mentioned in the final paragraph. If such an agency is to be of the greatest possible service, it should be organized and ready to function before the moment when it is most needed. It would be well if the national administration could give prompt consideration to the desirability of establishing an agency of this kind at the earliest possible moment."

SAYS CIVILIAN CONTACTS COMPLICATE PROBLEMS OF MILITARY SANITATION

Although the problems of military field sanitation are important and complicated, "they are less serious and less difficult to solve than are some of those created by contact between the troops and the civilian population," W. A. Hardenbergh, Colonel, Sanitary Corps, United States Army, Washington, D. C., declares in the July-August issue of *War Medicine*, published bimonthly by the American Medical Association, Chicago, in cooperation with the Division of Medical Sciences of the National Research Council, Washington.

For the solution of these problems, Col. Hardenbergh says, "efficient local and state health departments are needed, with the fullest and most sympathetic cooperation given and received at all times. The present arrangements contemplate such cooperation, with an officer of the United States Public Health Service acting as liaison officer, in order that the fullest possible health protection can be obtained by the joint action of all agencies engaged in health work."

DEATHS FROM DISEASE SHOULD BE FEWER IN '41 ARMY THAN IN '18

PHYSICIAN SAYS THAT MANY OF THE AILMENTS OF AMERICAN TROOPS IN LAST WORLD WAR CAN BE BETTER COMBATED TODAY

Unless some new cause of death occurs to weight the index unfavorably, the new Army should have a far lower death rate record from disease than did the Army of twenty years ago, O. H. Perry Pepper, M. D., Philadelphia, chairman of the Committee on Medicine of the National Research Council, declares in the July-August issue of *War Medicine*, published bimonthly by the American Medical Association, Chicago, in cooperation with the Division of Medical Sciences of the National Research Council.

"To obtain these improved results," he says, "a proper appreciation of the role of general medicine in the Army is essential. Officer personnel skilled in general medicine and diagnostic and therapeutic (treatment) facilities equal to the best in civil practice are required to guarantee the results which can and should be obtained."

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ENDOCRINE THERAPY AS APPLIED TO GYNECOLOGY*

By

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It is my purpose tonight to speak to you upon endocrine therapeutics as applied to gynecology. I must tell you at the beginning that I will speak conservatively, telling you the limitations as well as the accomplishments in this field. If one were to believe everything written about endocrine therapy, he might conclude that all hitherto unsolved gynecologic problems could be successfully solved by administering hormones. Such is far from true. There are a few conditions that can be quite satisfactorily treated with the hormones. There are others for which there is a good physiologic basis for attempting therapy but unfortunately the results are not sufficiently decisive to warrant positive statements as to the benefit of the treatment. Finally, there is a host of diseases which are treated unscientifically without sound physiologic basis and the results are, as one might expect, disappointing. It is a sad but true fact that most practitioners of medicine in this country learn their endocrine therapeutics from salesmen of pharmaceutical houses who, to say the least, are generally unscientific and always prejudiced in favor of making sales.

Before considering specifically the use of any hormone for any particular condition, it might be well to consider a few of the hormones from the point of view of their chief physiologic actions. The ovary secretes two known hormones: the estrogenic hormone, which is produced by both the follicle and the corpus luteum during the entire men-

strual cycle, and progesterone, which is secreted only by the corpus luteum during the latter half of the cycle. Both of these ovarian hormones have been chemically purified and their structural formulae are known. In general it may be said that the estrogenic hormone is a growth hormone. It stimulates the growth of the uterine musculature, stimulates myometrial contractions, and causes the endometrium to proliferate during the first half of the menstrual cycle. It also causes growth and maturation of the vaginal epithelium, converting that of the immature, spayed or postmenopausal animal into the mature thickened epithelium of the vagina of the sexually mature animal. Progesterone, on the other hand, retards uterine contractions and brings about progestational changes in the endometrium, preparing it for the reception of the fertilized ovum after it has been first acted upon by the estrogenic hormone.

It is now generally accepted that the anterior pituitary gland secretes two gonadotropic hormones. One stimulates the growth of the follicles and the other stimulates luteinization of the granulosa cells. The chemical formulae of these two substances are not known and they have not been obtainable in pure form. Therapeutically, they have been disappointing and, if one reviews the reports of therapeutic trials critically, he must conclude that they are of no proven value.

Two gonadotropic hormones have also been obtained from the urine of women which have similar but not identical action to the gonadotropic hormones of the anterior lobe. The follicle-stimulating hormone is found in considerable quantity in the urine of menopausal women. The luteinizing hormone is found in great quantity in the urine of pregnant women. It has been marketed and used extensively under two trade names, Follutin and Antuitrin S. Shortly after it

*Read before the Montgomery County Medical Society, March 4, 1941.

was marketed this hormone was used in the treatment of dysmenorrhea. The theory back of its use was based on the supposition that in certain cases of "essential" dysmenorrhea there is an imbalance between the stimulator of uterine contractions, namely, estrogen, and the inhibitor, progesterone, with the estrogenic effect predominating. The indicated remedy appeared to be progesterone but there was no potent corpus luteum hormone available at that time. Novak and Reynolds conceived the idea that the luteinizing hormone might be used, thus stimulating luteinization in the ovary and enabling it to produce more progesterone. It was hoped that, by inhibiting the uterine contractions upon which the menstrual pains were supposedly dependent, clinical relief would be obtained. Early optimism soon gave way to skepticism and it is now generally believed that the gonadotropic hormone is of no value in the treatment of dysmenorrhea. The reason for the ineffectiveness becomes apparent with the many reports of failures to show any evidence of luteinizing activity of this hormone in the human ovary. Fluhmann seems to have seriously crippled the theory upon which this treatment was based when he reported a series of blood estrin determinations on several dysmenorrheic and normal women at different phases of the menstrual cycle and found no essential differences in the blood estrin in the two groups. More recently progesterone has been used in dysmenorrhea and some success reported, but probably the dosage used has been too small to seriously affect the uterine contractions and I would be inclined to consider the reported successes as being principally on a psychic basis.

In passing it might be stated that progesterone has also been used in the treatment of habitual and threatened abortions, based on its experimentally proven quieting effect on the uterine musculature. Some authors claim success and others just as strongly state that it is of no value. I can give you no opinion on this phase of the subject from personal experience but I seriously doubt whether the dosage administered in most of the reported cases could have had any effect upon the outcome of the pregnancy. When more accurate information is available as to normal and abnormal values of pregnanediol excretion in early pregnancies, it may then

be possible to select such cases as have a progesterone deficiency and treat them with adequate dosage of progesterone. Until such data are available, the promiscuous use of progesterone in the treatment of habitual and threatened abortions must be considered a thrust in the dark.

Within the past two years a gonadotropic hormone obtained from the blood of pregnant mares gave promise of being of real therapeutic value. This hormone produces ovulation in rodents in both normal and hypophysectomized animals. If it were possible to induce ovulation in women with this hormone, it might prove of the greatest value in the treatment of uterine bleeding, amenorrhea and sterility when these conditions are associated with non-ovulation. In a very limited personal experience, I have never seen any evidence that this hormone can induce ovulation. A few years ago Davis and Koff concluded that they had produced ovulation in 16 out of 36 women who had been given the hormone and who were subsequently operated upon so that the ovaries could be observed and in some instances studied histologically. In critically reviewing their work, I believe there are several weak points in the evidence presented. Hartman undertook to test the ability of this hormone to induce ovulation in a series of monkeys who were known to be anovulatory. In his group ovulation occurred in only 7 of 104 cases. Since monkeys characteristically spontaneously revert to ovulation after periods of non-ovulation, it might well be concluded that this small number is no greater than would have been found on the law of chance in untreated animals. Finally, Robert Frank gave intravenous injections to seven women preoperatively, removed the ovaries and examined them microscopically. None showed evidence of recent ovulation. Thus, from the data now at hand, I believe we must conclude that as yet we have no hormone which is capable of inducing ovulation in a woman who is non-ovulatory.

One field in which endocrine therapy has been found to be of real proven value is in the treatment of gonococcal vaginitis in children. The idea that the estrogenic hormone might prove of value in this disease originated with Lewis, who based his belief upon the long recognized clinical fact that the adult vagina is immune to invasion by the

gonococcus, whereas the child's vagina is very susceptible. Allen had previously shown that the thin immature vaginal mucosa of an immature animal could be transformed into the thick adult type with the estrogenic hormone. Lewis treated a small group of these cases with sufficient success to warrant further trials. He gave the children hypodermic injections of the hormone. Brawner and I attempted this on a larger series and were able to cure 72 per cent of the children by daily hypodermic injections of the hormone in oil. The remaining 28 per cent could not be cured regardless of the size of the dose. We then had made up for us some vaginal suppositories with which we have treated successfully over 300 children.

Our present routine of treatment is as follows: The mother is told to wash the vulva at the daily bath, but no vaginal irrigations or instillations are used. She is then given a demonstration of how to introduce a suppository into the child's vagina. The suppositories of amniotin or theelin for children which are now on the market contain 1,000 international units and have proved most satisfactory. In almost every instance they can be inserted into the child's vagina without difficulty. Only once did we find it necessary to rupture the hymen, with the child under anesthesia, before treatment could be satisfactorily carried out, but it would seem that the better drainage obtained by this procedure in children with minute hymenal orifices is probably also advantageous in clearing up the infection. One suppository is introduced daily at bedtime.

The patients are brought back to the clinic at weekly intervals, when vaginal smears and washings are obtained. The washings are made with a small medicine dropper and examined under low magnification. As soon as the vagina is well under the influence of the estrogen, epithelial desquamation begins. At times this is so profuse as to cause the mother to fear that there is an increased amount of pus. But as soon as this epithelial response takes place, the vulval reddening begins to clear up, and in a few days the smear becomes negative. We insist on the smears being stained by the Gram method, so that the gonococci can be differentiated from gram-positive cocci of like morphology. When the gonococci are numerous and many typical cells loaded with diplococci are ob-

served, little difficulty is experienced in interpreting the smear, but as the condition begins to clear up and the organisms become scarce, the great advantage in the differential stain becomes apparent.

After the first negative smear the treatment is continued for two more weeks and, if the weekly smears continue to be negative, it is discontinued. In the average case, the entire treatment extends over about a month. It is possible that in some cases medication could be discontinued in less than two weeks after the smears become permanently negative, but since we have been following this routine recurrences have been rare, whereas when we discontinued the suppositories sooner, in our earlier studies, they were more frequent. The children are brought back to the clinic one and two months after discontinuing treatment, as a matter of dispensary routine, but for research purposes our first hundred patients were followed much longer.

At the time of our first paper a question was raised by many persons, including ourselves, as to the permanence of the cures. Owing to the short time which had elapsed we were unable to answer this question. Since then we have made a follow-up study of the first 100 cured patients. Of these children, ninety-eight were well at the time of the last examination, from three months to two and one-half years after the cessation of treatment. Whether the two children who were found to have vaginitis at the time of the check-up represent recurrences or reinfection is debatable. Considering the prevalence of gonococcal infections in the Negro homes from which most of these children come, there is the distinct possibility of reinfection. At any rate the percentage of permanent cures may be said to be 98 in this group.

The possibility of harm to young patients with vaginitis through the administration of estrogen has been uppermost in our minds since we began this study. In our first publication we reported no harm to the patients except for some localized painful induration at the site of the injection when the amniotin was given in oil. This effect we considered a distinct disadvantage of this form of treatment but it has been overcome by the substitution of vaginal suppositories. No cases of salpingitis were noted in our series

of 175 cases. Two cases have been seen since but the incidence of salpingitis is certainly no greater than in untreated cases or in those treated by other methods.

The ultimate effect of the estrogen on the immature genital tract may now be considered. Allen and Diddle gave monkeys amniotin by hypodermic in doses comparable to those received by our children. Examination of the monkeys' ovaries thirty days after the cessation of treatment showed them to be normal histologically. The work of Shumacker on mice, and Leonard, Meyer and Hisaw on immature rats, substantiates the idea that no detrimental effect upon the ovaries of these animals could be noted by administering even larger doses over long periods of time.

In our early cases of hypodermic administration we observed definite hypertrophy of the breasts in most of the children who received large doses of amniotin. On the other hand, the children who received amniotin vaginally rarely showed any changes in the breast and then the changes were slight and transient.

The last word concerning the possible harmful effect of estrogenic substance cannot be said until a group of children treated with it have reached maturity and borne children. At this time, however, it is possible to say that all of the children so treated seem to be developing normally as far as can be determined by examination of the external and the internal genitalia. A few have started to menstruate quite normally at the normal time. In view of this clinical and laboratory experience, we believe that up to date no evidence has been found that the treatment is harmful.

Non-specific vaginitis in children can also be cured with estrogenic suppositories but in our experience there is a greater tendency for non-specific infections to recur. The principle of thickening the vaginal mucosa with the estrogenic hormone has also been extended to the treatment of postmenopausal vaginitis by Adair and others. In general, it is possible to thicken the thin postmenopausal mucosa of women after the menopause and thus permit healing of the minute abrasions which are constantly being infected with the ever-present non-specific vaginal flora, but here, again, recurrences are rather frequent after the withdrawal of the hor-

mone. After well cornifying the senile vaginal mucosa by the nightly use of adult suppositories containing 2000 international units of the hormone, it is often possible and desirable to maintain the effect indefinitely by the use of the suppositories twice weekly. The irritation of the vulva associated with atrophic postmenopausal changes in the skin can often be relieved by the use of these suppositories but they should not be relied upon when there are leukoplacic areas in the skin which have been definitely shown to be precancerous and hence should be removed surgically.

The only objection to the use of estrogenic suppositories at present is the expense. Woodruff and I are now treating a series of cases of gonococcal vaginitis with suppositories containing 0.1 mgm. of diethylstilbestrol, which product can be marketed for a small fraction of the cost of suppositories of the natural hormone. Our results will soon be published in detail but I should like to say now that they have been quite satisfactory. Breast hypertrophy occurred much more frequently than when suppositories of the natural hormone were used. When stilbestrol is administered to children orally for vaginitis, however, side effects in addition to breast hypertrophy occur rather frequently, such as clitoris growth, excessive uterine growth, precocious pubic hair growth, and bleeding. Although these manifestations of a general effect of this synthetic hormone may be of no serious significance, their appearance is sufficient to cause us to prefer to administer stilbestrol by suppository.

Since the treatment of functional uterine bleeding was one of the unsolved therapeutic problems at the time when endocrine therapy came into vogue, it was hoped that the hormones might prove to be the answer. There was a sound physiologic basis for this hope, for in most cases functional bleeding is non-ovulatory bleeding. In our laboratory only about 20 per cent of the endometria obtained by curetting functional bleeders is of the premenstrual secretory type. It is probable, however, that ovulation occurs in a considerably larger percentage, for, if the curettage is done in the first half of the cycle, naturally there would be no evidence of premenstrual change even though the patient was having ovulatory cycles. However, in the cases showing endometrial hyperplasia and probably in many others,

there quite certainly is an absence of corpus luteum formation in the ovary. There is a sound reason for this belief based on pathologic studies by R. Myer, Schoeder, Novak and Martzloff. The natural remedy would seem to be a potent corpus luteum extract. Until very recent years, however, none was obtainable. Novak and Hurd attempted to supply the deficiency of corpus luteum secretion by giving the gonadotropic hormone from pregnancy urine in the hope that this might promote luteinization in the ovaries and thus supply the deficient progesterone. Their reports and others seemed promising. From my own observations, I could not share their optimism. Frequently I observed a cessation of bleeding following the administration of the gonadotropic hormone but all too often I observed a recurrence of the bleeding and, in spite of even huge dosage, the bleeding was not stopped. Most observers now agree that the gonadotropic hormone is of little value in functional bleeding late in the menstrual life but some still believe it of value in the young. Personally, I have concluded that it is of no value, since I have observed cessation of bleeding following its administration in no larger percentage of women than one sees on the law of chance in untreated women.

Now that a potent corpus luteum extract is obtainable, progesterone is being used for functional bleeding but the results are not decisive. A change in the endometrial pattern from hyperplasia to secretory endometrium following the administration of progesterone has been observed in several instances. Sometimes this has been accompanied by a cessation of bleeding but not always. It is only fair to say that, although progesterone seems to be an indicated substitutional therapy, the proof of its value is not yet at hand. Perhaps the dosage used has been too small. It may be that pellet implantation of the pure crystals of the hormone, which is now being tried, may prove of real value.

The male hormone, testosterone dipropionate, has also been used for functional bleeding. The rationale of the use of this hormone is based on its ability to depress the action of the pituitary in its formation of the follicle-stimulating hormone. There seems little doubt that the bleeding can be stopped at times, in fact amenorrhea not in-

frequently results for months after administering this hormone. In my experience, however, many cases of functional bleeding are refractory to testosterone. There have also been reports of masculinization following the administration, which characteristics have not regressed after cessation of treatment. The hormone should be administered carefully in a dosage of not over 10-25 mgm. with a total dosage of not over 300 mgm. per month.

Since the earliest days of endocrine therapeutics attempts have been made to alleviate the distressing symptoms so common at the menopause. Extracts of the whole ovary and of the corpus luteum were used generally and the literature of two decades ago contained glowing accounts of the beneficial effects of these substances. We now know from biologic assays that these early products are entirely inert physiologically. There is no doubt that many of these early reports were honest but the apparent benefits were unquestionably psychologic. The ease with which our predecessors were deluded into believing that the products administered were responsible for the apparent benefits to their patients should be a warning to us to avoid the same pitfalls.

The cause of the vasomotor instability of women in the menopause is not known. Attempts have been made to correlate the severity of the flushes with the deficiency of the estrogenic hormone in the blood and urine of menopausal women but no definite parallelism has been observed. Fluhmann and others have concluded that there is a parallelism between the excess of follicle stimulating hormone in the blood of menopausal women and the severity of the hot flushes. There are sufficient exceptions to this general rule, however, to cast some doubt upon this belief. This view has been responsible for the theory that the clinical improvement often noted in treating menopausal women with the estrogenic hormone is due to a depressing effect of the estrogen upon the pituitary in its production of the follicle-stimulating hormone.

But whatever the theory may be, there is now ample clinical evidence to indicate that menopausal symptoms usually can be quite satisfactorily controlled by the administration of the estrogenic hormone hypodermically in oil. In most cases 2000 international

units in oil three times a week are sufficient but occasionally 10,000 units given at that frequency are necessary to obtain the desired effect. As a rule, after about two weeks of this treatment there is a marked reduction in, or absence of, the hot flushes. The other nervous symptoms usually subside with the flushes. After the symptoms have subsided, the administration can often be reduced to twice and occasionally once per week. Many authors report that the benefit can be sustained by giving the hormone by mouth after the initial relief has been secured by parenteral administration but my results with the oral administration of the natural hormone have not been satisfactory.

Although the results with the estrogenic hormone administered hypodermically in oil are in the main satisfactory, there are definite objections to this form of therapy. It is expensive and the receiving of frequent hypodermics over a prolonged period of time is, to say the least, a nuisance to the patient. Two main attempts to circumvent these objections have been made. One has been by using the orally potent synthetic estrogenic hormone, diethylstilbestrol. This has been studied by Everett and Bennett in our clinic and they have reported complete relief of flushes in 23 of 32 women and partial relief in the remaining 9. Most of their patients received 1 mgm. per day or less, some being relieved by as little as 0.1 mgm. Vaginal smears showed regularly the estrogenic effect. There is no doubt of the biologic effectiveness of this hormone administered either by mouth or hypodermic but unfortunately the incidence of nausea and vomiting is high in patients receiving this synthetic hormone. Everett and Bennett found it in 12.5 per cent of their cases but in private practice I have found it considerably greater than this. Another objection to stilbestrol is the frequency of uterine bleeding following its administration. In Everett and Bennett's series it occurred in half of the cases. Some of their cases were women in whom the uterus had been removed so the actual percentage of women with intact uteri who bled was greater than 50. This is a serious objection to the use of this hormone in women who are going through a natural or radiation menopause for one cannot afford to assume that the appearance of blood from the uterus several months after

the last period is due to the therapy. There is always the possibility that the bleeding is due to some serious organic disease, such as carcinoma of the endometrium, and a curettage becomes necessary to exclude this. Judging from the experience in our clinic, we would limit the use of stilbestrol to those menopausal women who have been hysterectomized and who can tolerate the hormone without nausea and vomiting.

Another attempt to accomplish the desired effect of estrogenic therapy in the menopause has been by implanting pellets of the natural hormone in crystalline form. The experimental work of Parkes and Deansley showed that the absorption of the hormone from such pellets is slow and continuous and that spayed animals could be kept in permanent estrus for a prolonged period. Bennett, Mark and Biskind treated a series of menopausal women in this manner with results which were for the most part quite successful and lasting. The vaginal smears in these women were changed from the menopausal type to those of the type found in women during active menstrual life. The urinary estrin levels were for the most part increased and the levels of the follicle stimulating hormone reduced. It is only fair to state, however, that there were several women in whom there was not this correlation between the disappearance of symptoms and these changes in the urinary estrin and follicle-stimulating hormone levels. These cases occur often enough to cause some skepticism of the generally accepted belief that the flushes are dependent upon an excess of the follicle-stimulating hormone.

Bennett and I have now treated a larger series of menopausal women by implanting pure crystalline estrone pellets in symptomatic menopausal women. Our exact results will soon be published but I should like to say now that, in general, they have been very satisfactory. The crystalline estrone is made in very hard pellets of from 5-8 mgm. by hammering the crystals in steel moulds. After infiltrating the skin of the buttocks with nupercaine, the injection is made through a 12-gauge needle which has been previously loaded through the muzzle after the stilet has been partially withdrawn. The stilet is pushed down as the needle is withdrawn and the pellets are in place in the subcutaneous fat. We have arrived by trial and

error at the standard dosage of 50 mgm. Relief from symptoms is variable in duration, the shortest time in our series being 6 weeks and the longest 8 months. We have had no instances of uterine bleeding in women who had ceased menstruating for six months or longer. This is in contrast to the reports of others who used estradiol pellets with which they experienced bleeding rather frequently. The pellets of estrone have not yet been placed on the market but it is probable that they soon will be. It is my opinion that pellet implantation is the most satisfactory way yet devised of supplying the estrogenic hormone to menopausal women.

NOVOCAIN SYMPATHETIC BLOCK METHOD OF THERAPY IN THROMBOPHLEBITIS*

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There are few postoperative or postpuerperal complications as unpredictable, treacherous, and occasional dramatically tragic as the thrombo-embolic phenomenon. The fear-some and pathetic catastrophe of fatal pulmonary embolism in an apparently uneventfully convalescing patient preparing to leave the hospital has been repeatedly observed. Because of their greater frequency and their consequent persistence of disability other less dramatic thrombophlebitic sequelae may be considered even more significant. The occurrence of postphlebitic edema in an extremity with probable ulceration and subsequent life-long invalidism, recalcitrant to all therapeutic measures, has long been of particular concern to surgeons and obstetricians. This has led to intensive experimental and clinical investigations in an attempt to determine their causation, and the means of preventing their occurrence. In spite of these endeavors, however, the development of these complications remains enigmatic and their incidence apparently not reduced. Numerous etiologic factors have been pre-

sented as having pathogenic significance but no attempt will be made here to discuss them, as they have been reviewed and evaluated in a previous publication.¹ This presentation is concerned with therapeutic considerations and particularly with the novocain sympathetic block method of treatment.

In a previous review² of the therapy of thrombophlebitis the treatment was divided into three phases: (1) prophylactic, (2) conservative and (3) radical. The importance of prophylaxis is obvious as it signifies the avoidance of those factors which may be considered as precipitating the thrombotic process. Accordingly, the significant factors which must be considered under prophylaxis are the following: (1) hydration, (2) mobilization, (3) respiratory stimulation, (4) prevention of increased abdominal tension, (5) application of heat (heat tent) and (6) heparinization.

The significance of adequate hydration lies in the fact that dehydration which may occur postoperatively and which increases the concentration and viscosity of the blood favors thrombosis. Numerous investigators have directed attention to the importance of circulatory retardation as a causative factor in intravascular clotting. There are a number of factors which predispose to circulatory retardation and venous stasis, but probably the most important of these are posture, immobility, hypopnea, relative quiescence of the patient postoperatively, and increased abdominal tension. For these reasons measures should be employed to combat their occurrence. Early postoperative mobilization is essential. Patients should be instructed to move their extremities frequently. On the Tulane Surgical Service there is a routine postoperative order to have patients move their extremities up and down fifteen times every hour during the waking period. It has been shown that postoperatively the diaphragmatic excursions are diminished and that decreased respiratory activity or hypopnea is likely to occur because of pain caused by movement of the abdominal muscles and because of the increased abdominal tension. This results in a disturbance of the

*Read before the South Highland's Hospital Staff, Birmingham, May 12, 1941.

From the Department of Surgery, School of Medicine, Tulane University, New Orleans.

1. Ochsner, Alton, and DeBakey, Michael: Thrombophlebitis and Phlebothrombosis, C. Jeff Miller Lecture, South. Surgeon 8: 269, 1939.

2. Ochsner, Alton, and DeBakey, Michael: Therapy of Phlebothrombosis and Thrombophlebitis, Arch. Surg. 40: 208, 1940.

intrathoracic pressure which predisposes to venous stasis and circulatory retardation, and the return flow of the blood to the heart. The prevention of hypopnea is therefore important and patients should be instructed to take deep breaths frequently during their waking hours. Similarly increased abdominal tension as a result of ileus should also be combated by the use of appropriate methods, such as indwelling duodenal catheter, etc.³ For the same reason the use of tight abdominal bandages should be avoided when possible. The application of heat in the form of a heat tent to the lower part of the abdomen is undoubtedly of value in post-operative cases, not only because of its beneficial effects on the tone of the intestines but probably also because it produces a vasodilatation of the peripheral vessels. The authors are convinced that one of the most important factors in the extremely low incidence of thrombophlebitis in the Tulane Surgical Service is the fact that postoperatively a large heat tent which covers the lower extremities as well as the abdomen is used routinely. Based on its anticoagulant activity heparin has been employed as a prophylactic measure but the objections to its use lies in the fact that in order to be effective it would have to be employed routinely. In view of the comparatively low incidence of thrombophlebitis such a measure would seem unnecessarily expensive and perhaps unjustified. Its prophylactic value probably lies in its employment in cases in which a predisposition to thrombosis may exist.

In the conservative treatment of thrombophlebitis the most classical method consists of immobilization and elevation of the extremity. Its rational basis is the placing of the part at physiologic rest to minimize the danger of breaking off of an embolus and to relieve edema by favoring lymphatic flow. A satisfactory method of immobilizing the entire extremity consists of applying a large sheet-wadding dressing from the tips of the toes to the groin. This has an additional value in that this dressing retains the heat. Hot compresses or heat tents may also be employed for applying heat, the purpose of which is to hasten normal involution of the thrombus and periphlebitis, that is, the

inflammatory changes. We have discarded this method of therapy because in our opinion the novocain block method which will be described below gives far better results.

Hirudinization or the use of leeches has also been advocated as a method of therapy. The exact explanation for the good results obtained by this method has not been satisfactorily understood. The leech's salivary gland secretes hirudin which has an anticoagulant property and according to some the explanation lies in this action. The leeches are applied locally over the site of greatest tenderness. Another method of therapy based on anticoagulant activity consists of heparinization. A saline-heparin mixture is administered intravenously so that the clotting time of the patient's blood is maintained at about 15 minutes. The application of compression bandages, such as an Ace adhesive or an elastic adhesive bandage, has also been recommended and has been especially popular in Germany where this method of therapy originated.

In the authors' opinion, however, the best method of therapy is the production of vasodilatation by blocking with procaine hydrochloride the regional sympathetic ganglion. This method of therapy is based on the concept that vasospasm resulting from impulses originating from the thrombosed venous segment is one of the most important factors in the production of the clinical manifestations of the thrombophlebitis. That a localized thrombotic process can initiate a marked vasospasm has been observed by numerous investigators. The authors have shown in animal experiments that localized chemical thrombophlebitis may produce such marked arteriolar vasospasm that practically all pulsations disappear. In these experiments^{4, 5} the volume of pulsation in the hind foot of dogs was determined plethysmographically by the sensitive method of Turner. The femoral vein of the dogs was exposed from just proximal to the saphenous entrance to Poupart's ligament above, and ligatures were placed at these two sites. The chemical thrombophlebitis was produced in the ligat-

4. DeBakey, Michael; Burch, George, and Ochsner, Alton: The Effect of Chemical Irritation of a Venous Segment on Peripheral Pulse Volume, *Proc. Soc. Exper. Biol. and Med.* 41: 585, 1939.

5. Burch, George; DeBakey, Michael, and Soderman, William: Effect of Venous Pressure on Volume Pulsation, *Proc. Soc. Exper. Biol. and Med.* 42: 858, 1939.

3. Ochsner, Alton: The Conservative Treatment of Appendiceal Peritonitis, *Texas State J. Med.* 32: 579, 1937.

ed venous segment by injecting a 40 per cent aqueous solution of sodium salicylate. The perivascular tissues of the entire venous segment were carefully infiltrated with procaine hydrochloride solution after this and plethysmographic determinations were made following each of these procedures. In another group of animals a similar experiment was performed except that a resection of the corresponding lumbar sympathetic ganglion and intervening chain had been performed 24 hours previously. It was invariably found that the volume of pulsation in the foot was markedly decreased following ligation of the femoral vein and almost disappeared following the production of the chemical thrombophlebitis by the introduction of the solution of sodium salicylate into the venous segment. This affect was always abolished by the interruption of nerve pathways by local infiltration with procaine hydrochloride at the site of the chemical irritation or by resection of the lumbar sympathetic ganglia and intervening chain. These experiments suggest therefore that the decrease in volume pulsation following chemical thrombophlebitis and periphlebitis is due to vasoconstrictor impulses initiated locally by the chemical irritant and coursing through the sympathetic ganglia in order to reach the terminal arterial vessels of the extremity. We have also been able to demonstrate clinically that a definite vasospasm exists in thrombophlebitis and this vasospastic action can be abolished by novocain block of the regional sympathetics.

In previous publications^{2, 6} the authors have discussed in detail the mechanism by which vasospasm in thrombophlebitis can produce a clinical manifestation. However, it may be pertinent here to review briefly this concept. Edema may be due to the factors which result from vasospasm and increase the amount of perivascular fluid: (1) increased filtration pressure, (2) anoxia of the capillary endothelium, and (3) the diminution of the flow of lymph. The increase in venous pressure in thrombophlebitis has been repeatedly demonstrated. This obviously increases the filtration pressure which favors transudation of fluid from the vascular to the perivascular spaces. Because

of the associated arteriolar spasm and evidence of diminished vascularity there probably occurs an anoxia of the capillary endothelium, which increases the permeability of the capillary endothelium, permitting an excessive exudation of vascular fluid into the perivascular spaces, thus resulting in the production of edema. Once the fluid gets into the perivascular spaces in such a case it has difficulty in getting back because of the increase in the pressure on the venous side. Of equal importance in this connection is the fact that the pump which is responsible for the movement of the lymph is lost. Several investigators have demonstrated that the movement of lymph is dependent upon arteriolar pulsations. In the presence of marked vasospasm, arteriolar pulsations are reduced to a minimum and the lymphatic pump is thereby lost. This decrease in lymph flow results in the stagnation of lymph fluid and the accumulation of proteins in the perivascular fluid, thus setting up a vicious cycle in that the pressure of the perivascular fluid approaches that of the intravascular fluid tending to prevent absorption of fluid from the perivascular spaces into the vascular channels. Such a vicious cycle is broken by a novocain block of the sympathetic ganglia, which causes an interruption of the vasoconstrictor impulses and thus produces a reestablishment of the normal exchange of the intravascular and perivascular fluids. As a result of vasodilatation the blood supplied to the capillaries is increased, the anoxia of the capillary endothelium is relieved, and the excessive exudation of the vascular fluid into the perivascular spaces is prevented. By the establishment of the normal arteriolar pulsations the pump which is responsible for the movement of the lymph is reestablished and the perivascular fluid is rapidly carried away. Accordingly, therefore, the edema of the extremity in a patient with phlegmasia alba dolens should disappear within a relatively short time after the institution of sympathetic ganglia block therapy. Similarly the other manifestations associated with thrombophlebitis are also probably relieved by the increased vascularity. Pain, which is one of the most prominent manifestations of thrombophlebitis, is relieved dramatically, and this is probably due to the increased blood supply to the part, the pain being the result

6. Ochsner, Alton, and DeBakey, Michael: Thrombophlebitis: The Role of Vasospasm in the Production of Clinical Manifestations, J. A. M. A. 114: 117, 1940.

of ischemia. The rapid subsidence of fever may be also explained on the basis of a more rapid resolution of the inflammatory process by the increase of vascularity to the involved venous segment.

The results of this form of therapy have been reported in previous publications.^{2, 7} In a series of 41 cases treated by novocain block of the regional sympathetics, pain was completely and permanently relieved within from 15 minutes to one-half hour after the first injection in 85 per cent of the cases and after the second injection in the remainder. Over 60 per cent of the patients were free from fever within 48 hours after institution of therapy. In the remainder the temperature had returned to normal within 3 days to a week, and in only two patients was there fever longer than one week. In the majority of cases there was a rapid subsidence of edema. Complete subsidence of edema occurred within 4 days or less in one-half of the cases, within 5 to 8 days in 30 per cent, and within 9 to 10 days in 15 per cent. Of particular importance also is the fact that this method of therapy markedly shortens the convalescence of the patient as well as his stay in the hospital. Two-thirds of the patients were discharged from the hospital as cured within 8 days after institution of therapy and approximately 90 per cent within 12 days. Only 4 patients remained longer, one because of pulmonary infarct, one to permit further experimental observations, and two others because of other necessary therapy. The follow-up observations which have been made on a number of these patients over periods varying from several months to over two years are particularly significant. In none has there been any evidence of recurrence of edema or of other postphlebitic manifestations. This is a particularly important fact in view of the large number of cases which develop postphlebitic edema following other methods of therapy, and the lifelong disabilities which are consequent to these postphlebitic manifestations.

The technique of lumbar sympathetic block is not difficult.⁸ For the lower ex-

tremity the patient is placed in the lateral recumbent position. The sites of puncture on the skin are determined by taking points approximately $2\frac{1}{2}$ finger-breadths lateral to and on a horizontal level with the spinous processes of the first four lumbar vertebrae. Each needle is inserted vertically until the transverse process of the vertebrae is reached. The direction of the needle is then changed slightly towards the midline and the needle is inserted approximately $2\frac{1}{2}$ finger-breadths beyond the transverse process so that its point is near the anterior lateral surface of the body of the vertebra where the sympathetic chain lies. Five cubic centimeters of one per cent procaine hydrochloride solution is injected into each needle, care being taken to determine previously that the needle is not in a vessel. It has been found that daily blocks should be done until the temperature drops to normal and remains there. For this reason two or three blocks are usually sufficient.

The radical treatment of thrombophlebitis is necessary under certain circumstances but fortunately these occur infrequently. Of the radical forms of therapy, ligation or excision of the involved venous segment is probably the most desirable. Ligation of the vein proximal to a thrombophlebitic process was advocated as early as 1784, by Hunter, and is particularly indicated in the presence of a septic process in which the breaking off of thrombi and embolization are likely to occur. The authors have previously reported a case of traumatic thrombophlebitis of the popliteal vein which progressed into a suppurative process. Due to liquefaction and breaking off of the infected clot there was produced recurrent septic emboli which resulted in the clinical manifestations of chills and hyperpyrexia recurring at six-hour intervals. The femoral and saphenous veins were exposed and ligated approximately 48 hours after the onset of the septic manifestations. This was followed by a sympathetic block and within 12 hours the temperature returned to normal and remained normal. Two days later the patient was discharged completely relieved of all previous manifestations.

SUMMARY

1. The treatment of thrombophlebitis is reviewed and classified into prophylactic, conservative and radical measures.

7. Ochsner, Alton, and DeBailey, Michael: The Role of Vasospasm in Thrombophlebitis and its Treatment by Novocain Block of the Sympathetics, *Tri-State Med. J.* 13: 2654, 1941.

8. Ochsner, Alton, and DeBailey, Michael: Treatment of Thrombophlebitis by Novocain Block of Sympathetics; Technique of Injection, *Surgery* 5: 491, 1939.

2. The institution of prophylactic measures signifies the avoidance of those factors which may be considered as precipitating the thrombotic process. Accordingly the significant factors considered under prophylaxis are (1) hydration, (2) mobilization, (3) respiratory stimulation, (4) prevention of increased abdominal tension, (5) application of heat and (6) heparinization.

3. A brief review of some forms of conservative therapy is presented. Of these, procaine hydrochloride block of the regional sympathetic ganglia is considered the method of choice. This method of therapy is based on the concept that vasospasm resulting from impulses originating from the thrombosed venous segment is one of the most important factors in the production of the clinical manifestations of thrombophlebitis. The clinical and experimental observations supporting this concept are described.

4. Results in 41 cases of thrombophlebitis treated by novocain block of the regional sympathetic are presented.

5. The technique of novocain block of the sympathetics is described.

6. The indications for radical therapy in thrombophlebitis are discussed.

THE MANAGEMENT OF PATIENTS WITH APPENDICITIS*

WITH SPECIAL REFERENCE TO THOSE WITH PERFORATION

By

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Appendicitis is the most common acute pathologic condition of the abdomen and becomes one of the most serious surgical problems if not promptly diagnosed and treated. The English were the first to describe appendicitis as an entity. Recognition of the disease soon spread to other civilized countries. It was first described in America by Reginald H. Fitz¹ at the meeting of the American Association of Physicians in 1886.

*Read before the Association in annual session, Mobile, April 15, 1941.

From the Surgical Department of the Norwood Hospital and Clinic.

1. Graham, Evarts A.: *The Year Book of General Surgery*, Chicago, The Year Book Publishers, 1939, p. 415.

Since appendicitis is such a common disease, it has stimulated a great deal of research and considerable literature has been written on the subject. It has been shown that appendicitis is a rare finding among non-civilized peoples. The question naturally arises as to whether this condition is due to kind of food, environment or habits of the more civilized. The etiologic factors in producing appendicitis still remain vague and indefinite, although Wagensteen and Bowers² have shown that obstruction plus infection are the main factors in producing inflammation of the appendix.

Although appendicitis is a common and well-known disease among physicians and has been widely publicized among the laymen, and a disease of low operative mortality in the hands of competent surgeons, each year the disease proves fatal to a large number of people (10.4 per 100,000 in 1939). In the gainfully employed between the ages of 15 and 64 in this country, appendicitis ranks as the eighth most common cause of death.³ Yet McBurney's goal in 1899 was to save all patients with appendicitis. The evils of late diagnosis, purgation and delayed hospitalization have been stressed; but surgeons continue to see a large proportion of patients after perforation has occurred, and the high mortality in this group remains a challenge to them.

In a previously published paper,⁴ I reported a review of 5,303 consecutive appendectomies (January 1917 through December 1938). During this period our clinic made great effort to lower the mortality rate in patients with appendicitis. We emphasized the importance of recognizing the sequence of symptoms so that an early diagnosis could be made and the period between the onset of symptoms and operation be kept at a minimum. Our efforts have been continued and I wish to present our results with special consideration to the diagnosis of appendicitis and management of the gangrenous, perforated and abscessed cases.

2. Boyd, William: *Surgical Pathology*, Philadelphia, W. B. Saunders Company, 1939, p. 329.

3. Graham, Evarts A.: *The Year Book of General Surgery*, Chicago, The Year Book Publishers, 1940, p. 478.

4. Carraway, C. N.: *Appendicitis*, M. Times 67: 164 (April) 1939.

SYMPTOMATOLOGY

In an effort to obtain all the information pertinent to a correct diagnosis, the members of the staff, residents and internes are required to obtain the following data on each patient suspected of having an acute condition of the abdomen:

Age, color, sex; time of onset of first symptom; position of body when first symptom was noticed; if first symptom was pain, the location and character (cramping, stabbing, cutting or aching); the intensity of pain at onset (if pain was severe enough to cause patient to grasp abdomen and sit down or if he had to be carried from the place where he was stricken); presence of nausea and its relation to the onset of pain; if pain changed in character after onset; localization of pain; time elapsing from onset of pain to localization; if patient is comfortable in a fixed position or is in continuous motion trying to find a comfortable position; amount of elevation of temperature and pulse rate; if patient took a purgative; and if he consulted a physician before admission to the clinic. A careful inquiry concerning previous diseases is made, routine laboratory work is done and a detailed physical examination made and recorded.

FIGURE I

ACUTE CONDITIONS OF THE ABDOMEN

Clinic No.	Admission Date	Time
Name	Address	
Age	Color	Sex
Referred by Dr.		
What was patient doing when taken ill?		
What did patient do right after onset?		
Did patient have to be carried from the place where he was stricken?		
FIRST SYMPTOM: PAIN—Cramping, Stabbing, Cutting, Aching; Onset Sudden or Gradual; Severe or Mild; Location of pain or TENDERNESS		
Date		
Time		
SECOND SYMPTOM: PAIN—Cramping, Stabbing, Cutting, Aching; Onset Sudden or Gradual; Severe or Mild; Location of pain or TENDERNESS		
Date		
Time		
THIRD SYMPTOM: PAIN—Cramping, Stabbing, Cutting, Aching; Onset Sudden or Gradual; Severe or Mild; Location of pain or TENDERNESS		
Date		
Time		
FOURTH SYMPTOM:		
Date		
Time		
FIFTH SYMPTOM:		
Date		
Time		
Did patient take a purgative?		
ANY PREVIOUS ABDOMINAL CONDITIONS (describe)		
PHYSICAL EXAMINATION: Temp. Pulse		
Resp. Tenderness Rigidity Masses		
Remarks		
Does patient lie quietly or stay in a fixed position or is he in continuous motion?		
Date		
Time		
OPERATION		
Date		
Time		
Operative Findings		
Pathological Report		
Condition on discharge		
Number of hospital days		
(Specify by encircling under FIRST SYMPTOM the first symptom only; under SECOND SYMPTOM the second symptom only, etc.)		
Surgeon		

In reviewing our records we have found that the five cardinal symptoms described by the late John B. Murphy are pathognomonic of appendicitis: first, abdominal "cramp-like" pain, usually around the umbilicus or above; second, nausea, or nausea and vomiting, coming on in from a few seconds to several hours; third, localized tenderness within twelve hours. This localization occurs most frequently in the lower right quadrant known as McBurney's point (72%). It may occur in the lower midline of the abdomen or just to the left of the midline, or between the crest of the ilium and costal margin, or along the costal margin. The fourth and fifth cardinal symptoms are slight elevation of temperature ($1\frac{1}{2}$ to 2 degrees) and slight elevation of pulse rate. Deaver emphasized this order and worked out the cause, showing why the symptoms occur the way they do. Others who emphasized this chronologic order of symptoms are Babcock,⁵ Kalteyer⁶ and McGehee.⁷ Wilkie⁸ did much to elucidate the pathology and symptoms of acute appendicitis by recognizing two primary types: first, acute inflammation of the wall of the appendix; and second, obstruction of the lumen of the appendix. He states that these two types differ in their pathology, their symptomatology and in their danger. The first type is mild and patients frequently recover; the second type usually results in gangrene within 6 to 24 hours, with subsequent rupture. He states that history of abdominal pain localizing in the right lower quadrant is practically diagnostic of appendicitis. However, his series frequently did not show elevation of temperature and pulse, or nausea and vomiting. There is no evidence to show that Wilkie rechecked the temperature in patients where the nurse or attending physician recorded it as normal. In a study of the gangrenous, ruptured and abscessed cases in our series (1936-1940), we find that the cycle of symp-

5. Babcock, W. Wayne: The Diagnosis and Management of the Septic Appendix, Proc. Internat. Assemb. Inter-State Post-Grad. M. A. North America, 1935, p. 368.

6. Kalteyer, Frederick: The Diagnostic Significance of Abdominal Pain, Ibid. 1937, p. 81.

7. McGehee, John L.: Advances in the Treatment of Acute Peritonitis of Appendiceal Origin, Mississippi Doctor, p. 488, (February) 1941.

8. Graham, Evarts A.: The Year Book of General Surgery, Chicago, The Year Book Publishers, 1931, p. 420.

toms was completed within 12 hours in 68.8 per cent of cases (Table 1). We have found in our series of 4,072 patients (1923-1940) that practically all had some type of abdominal pain. In patients who stated they were "sick at the stomach," on further questioning we found that they did not mean that they were nauseated, but that they had pain in the abdomen. This was especially true in children. Patients who complained of awakening at night with vomiting, on careful inquiry, were found to have pain in the abdomen and vomiting. Those patients who complained of vomiting before a severe abdominal pain had the attack soon after a heavy meal. Temperature was elevated in about 95 per cent of patients (Table 2A). Frequently when the attending physician stated that the patient did not have elevated temperature or when the nurse recorded a normal or subnormal temperature, I have found, by carefully checking the temperature, that it was somewhat elevated.

TABLE 1
TIME INTERVALS—ONSET TO COMPLETION OF
CYCLE OF SYMPTOMS

POSTOPERATIVE DIAGNOSIS	Number of Attacks	6 hours or less	6-8 hours	8-10 hours	10-12 hours	12-24 hours	24-36 hours	Over 36 hours
GANGRENOUS Attack beginning with cramp in abdomen	one	58	31	23	26	51	10	4
	more than one	18	7	2	4	6	3	1
Attack beginning with pain in right side of abdomen	one	14	1	1	1	1	1	2
	more than one	2	2		1			
RUPTURED Attack beginning with cramp in abdomen	one	15	12	2	5	14	11	2
	more than one	7	1	1	1		1	
Attack beginning with pain in right side of abdomen	one	4	1	1	1			1
	more than one							
ABSCESSED Attack beginning with cramp in abdomen	one	3	2	1	2	3	3	1
	more than one				1			1
Attack beginning with pain in right side of abdomen	one	1	1					
	more than one	3						
		125	58	31	42	75	29	12
		256 68.8%			116 31.2%			

We have had difficulty in getting accurate histories in patients who delayed in getting to the hospital. It seems that it is hard to remember the character of symptoms after

the climax is over. In these patients we have made a special effort to get a correct interpretation of the symptoms of the first 24 hours after onset.

TABLE 2A
SYMPTOMS IN ACUTE AND SUBACUTE
APPENDICITIS*

POST- OPERATIVE DIAGNOSIS	FIRST SYMPTOM		Nausea or Nausea and Vomiting	Tender- ness	Elevated Temper- ature	Max. Tem- perature (Degrees)
	Pain in abdomen	Pain in right side of abdomen				
SUBACUTE	78.9%	21.1%	94.7%	100%	88.1%	101.6
ACUTE—One attack	87.9%	12.1%	98.7%	100%	96.2%	104.0
ACUTE—More than one attack	71.8%	28.2%	94.8%	100%	89.7%	103.0
GANGREN- OUS—One attack	91.8%	8.2%	95.8%	100%	93.5%	103.0
GANGREN- OUS—More than one attack	86.8%	13.2%	92.2%	100%	88.2%	101.0
RUPTURED	90.5%	9.5%	92.8%	100%	96.4%	104.2
ABSCESSED	80.8%	19.2%	80.8%	100%	96.2%	103.2

*In the cases with more than one attack, the most recent attack is described.

The five cardinal symptoms will be present in the majority of cases (Table 2A), but we must not let them mislead us when dealing with an atypical form of appendicitis. Many patients may have had a mild form of appendicitis, their cycle of symptoms lasting over a relatively long period of time, and have recovered from the attack. However, the appendix is left fibrosed and sclerosed, probably with permanent adhesions, which are conducive to recurrent attacks, with altered symptomatology. These cases are designated as chronic recurrent or acute recurrent, depending on the phase of pathology found at the time of operation. Many of these patients give a history of rightsided pain or pain wherever the appendix may have been fixed by adhesions, with tenderness and soreness and rebound tenderness in this region. Many give no history of cramping or nausea (Table 2B). We have found that when a patient did not give a typical history and also gave no history of repeated attacks the appendix was fibrosed or sclerosed, indicating previous attacks.

Inflammation of appendices that are in an abnormal position may not result in the usual cycle of symptoms. If an appendix located in the pelvis becomes inflamed, there may be absence of rebound tenderness in the

abdomen, but on vaginal or rectal examination, tenderness will be elicited. If the appendix is located high up in the right side of the abdomen, because of faulty rotation or descent of the cecum, there will be the usual cycle of symptoms, but tenderness will be found just below the costal margin on the right. If the appendix is in the lumbar gutter, tenderness will be noted in the lumbar region.

TABLE 2B
SYMPTOMS IN CHRONIC APPENDICITIS

	History of One Attack	History of More Than One Attack	
Abdominal cramp followed by nausea and vomiting.....	14.45%	21.70%	
Abdominal cramp without nausea and vomiting.....	6.02%	3.62%	45.79%
Right-sided pain followed by nausea and vomiting.....	3.62%	26.50%	
Right-sided pain without nausea and vomiting.....	7.22%	16.87%	54.21%
	31.31%	68.69%	100.00%

There is one type of acute appendicitis that is rather rare and has a chain of symptoms that is different from the usual cycle. In acute inflammation of a retroperitoneal appendix, the first symptom is general discomfort over the abdomen, with little or no cramping or nausea. A few hours after the onset the patient has a chill followed by high fever. A slight abdominal tenderness and lumbar aching are noted. The patient appears to be toxic, having a rapid pulse. The temperature varies from 102 to 107, and the patient has all the symptoms of cellulitis with recurring chills and fever, followed by sweating. We have had twelve cases of this type. I personally operated upon six. My associate, Dr. D. F. Talley, operated on one such patient who had a temperature of 107 while on the operating table. All twelve cases recovered. Crisler,⁹ Jackson¹⁰ and Muller¹¹ have called attention to this type of appendicitis caused by faults in rotation and descent of the cecum, the appendix being caught behind the folds of the peritoneum. This type of appendicitis is frequently not recognized but is discovered at autopsy. Jackson¹⁰ and C. W. Roberts¹² have

reported cases found at autopsy. We have had one such case (Case 6 described later). We cannot estimate the percentage of deaths in this type of appendicitis as the diagnosis is seldom made and few come to autopsy.

DIFFERENTIAL DIAGNOSIS

The unfolding of the symptoms in a typical chronologic order is very helpful in making a diagnosis of appendicitis. However the patients whose symptoms were not in chronologic order or who did not have all symptoms had to be differentiated from other acute conditions of the abdomen. If one will take into consideration the pathology of each abdominal organ that can and does occur, and the symptoms produced by this pathology and the sequence of symptoms, one will be less apt to err in diagnosis. A correctly taken history will solve the problem in 99 per cent of cases. One must keep in mind that sudden severe pain can be produced only by a mechanical alteration of the normal position of an organ, by torsion, rupture or obstruction of circulation. Such is the case in herniation, torsion of viscera, movement of stone, and perforation of some abdominal organ.

Abdominal pain that increases in severity and is followed by tenderness is due to a progressive inflammatory condition. The severity increases as the pathology develops, and, when more than one organ is involved, may produce more than one type of pain. However, there is one exception: In acute pancreatitis the onset of pain is sudden and severe, and continues with severe shock.

Perhaps the most frequent errors in diagnosis occur in differentiating chronic and acute recurrent appendicitis from pathology of the female genital organs and from pathology of the ureter in both male and female. However, if one considers the anatomy and physiology of the female reproductive organs and utilizes all diagnostic methods of ureteral conditions, one should seldom err.

TECHNIQUE OF OPERATION AND POSTOPERATIVE CARE

Each surgeon with years of experience and acquired judgment has worked out an operative technique that is suited to him and gives the best results in his hands; therefore, I am not going to outline an operative technique but only mention a few procedures which have proved successful with us.

9. Crisler, J. A.: In discussion of paper on appendicitis, Annual Meeting, Southern Medical Association, Hot Springs, 1921.

10. Jackson, Jabez: Appendicitis, Proc. Internat. Assemb. Inter-State Post-Grad. M. A. North America, 1927, p. 306.

11. Muller, George B.: Chronic Appendicitis and Diseases which Simulate It, Ibid, 1934, p. 93.

12. Roberts, C. W.: Personal communication.

We always make the incision over the point of greatest tenderness. A small incision is made, but sufficiently large to allow a careful survey of the pathology; then, if necessary, the incision is enlarged. We try never to get out of the field of pathology, never handle the intestines, and do not pack except in cases of walled-off abscesses. When the appendix is ruptured, we drain the area of pathology only.

We have used all types of anesthetics and have found intravenous pentothal sodium, with continuous administration of oxygen, to be the most satisfactory because of the perfect relaxation it affords.

Postoperatively, if necessary, intravenous glucose is administered, and the patient is placed under an oxygen tent. Negative pressure is used if the patient is very ill.

IMMEDIATE VERSUS DELAYED OPERATION IN APPENDICITIS WITH PERFORATION

In 1892, A. J. Ochsner¹³ first advocated delay in operation, or the so-called conservative treatment, in the care of the perforated appendix. Deaver and Magoun¹⁴ state that the decrease in mortality rate at the Lanke-nau Hospital in Philadelphia was due to the institution of conservative treatment in cases in which it was indicated. Gardner¹⁵ found a reduction in mortality, incidence of complication, and duration of hospitalization in patients with appendiceal peritonitis treated by delayed operation. Some others who have followed this type of treatment are Sherren, Berry, Royster, Collier, Schmidt, Jobson and Pfeiffer, Vaughn, Bailey, Swann and Fitzgibbon, Love, Ryle and Raynor, Lett and Brown.¹⁶ The most striking results in this type of treatment are reported by Guerry¹⁷—a mortality rate of 1.42 per cent in 139 patients with diffuse appendiceal peritonitis. Percy¹⁸ has always gotten excellent results at the Augustana Hospital

where the Ochsner treatment was originally instituted.

In attempting to determine exactly what type of patient is chosen for conservative treatment, a review of the literature confuses one, for there are differences of opinion. No rule can arbitrarily be laid down as to the kind of patient who should be treated by the method of delayed operation. Ochsner advocated his treatment in cases of spreading peritonitis, while Sherren¹⁹ in England used it where localization had already occurred. Gardner¹⁵ combines these two applications of the conservative regimen, and, with certain exceptions, treats by delayed operation all patients in whom a definite preoperative diagnosis of perforated appendicitis is made, regardless of the stage of the peritoneal infection in which the patient is first seen. A. J. Ochsner recognized that delayed operation was not borne well by the very young and very old. Alton Ochsner²⁰ recommends the conservative treatment in children in whom localization of the peritoneal infection is beginning. Col-ler and Potter²¹ and Adams and Bancroft²² have found the use of delayed operation advisable in children with diffuse as well as localized peritonitis. McGehee⁷ is of the opinion that any patient suspected of having a ruptured appendix should be carefully observed and individualized by an experienced surgeon and then the time of operation selected.

In contrast to these men, there have always been surgeons who contend that immediate operation regardless of the phase of the disease, or age or condition of patient, is the only type of treatment for patients on whom a preoperative diagnosis of appendicitis has been made. All of these agree, however, that operative intervention in a patient with appendiceal peritonitis is a serious procedure and should be undertaken only by the experienced, skillful surgeon. In one of the last meetings presided over by Lord Moynihan, the matter of immediate versus

13. Ochsner, A. J.: The Cause of Diffuse Peritonitis Complicating Appendicitis and its Prevention, *Am. J. Surg. & Gynec.* 15: 84, 1902.

14. Deaver, J. B., and Magoun, J. A. H.: Review of 5,499 Appendectomies Performed at Lanke-nau Hospital of Philadelphia, *Ann. Surg.* 79: 854, 1924.

15. Gardner, C. E., Jr.: The Conservative Management of Appendiceal Peritonitis, *South. M. J.* 32: 157, 1939.

16. Quoted from 20.

17. Quoted from 15.

18. Percy, Nelson M.: Personal communication.

19. Quoted from 15.

20. Ochsner, Alton: Conservative Treatment of Appendiceal Peritonitis, *New Orleans M. & S. J.* 87: 32, 1934.

21. Collier, F. A., and Potter, E. B.: The Treatment of Peritonitis Associated with Appendicitis, *J. A. M. A.* 103: 1753, 1934.

22. Adams, J. M., and Bancroft, P. M.: The Conservative Management of Appendiceal Peritonitis in Children, *J. Pediat.* 12: 298, 1938.

delayed surgery in acute appendicitis with perforation was debated and the final result was a vote of 54 to 49 in favor of immediate operation in all cases.²³ Among the advocates of immediate operation are Nuttall, Reid and coworkers, Gile and Bowler, Hobler and King.²⁴ Recently Horsley²⁵ reported a mortality rate of only 1.68 per cent in 119 patients with acute appendicitis with peritonitis who were treated by immediate operation. Herrick²⁶ reported 217 cases of acute appendicitis with generalized peritonitis operated on without delay with a mortality of 1.84 per cent. Gatch²⁷ says there is no reason for the belief that immediate operation for appendicitis, if properly done, spreads infection. He reports much better results in children treated by immediate operation than by delayed and says that the results in adults are about the same. Maes²⁸ states that even the most ardent advocates of the conservative treatment admit that it must be carried out on the threshold of the operating room, across which the patient must be carried immediately if he does not respond to the proper measures.

Since 1917, I have always advised immediate operation regardless of the condition or age of the patient and have operated on every case of appendicitis as soon as possible after it was diagnosed as such. Preoperative care and preparation were instituted to get the patient in the best possible condition for operation. There is no doubt that improved surgical technique, experience and judgment have gone a long way toward lowering the mortality and morbidity in poor surgical risks with gangrenous, ruptured and abscessed appendices. Since January 1917, 6,210 consecutive appendectomies have been performed at the Norwood Hospital. Of these 1,351 were removed incidentally dur-

23. Quoted from 28.
24. Quoted from Lundgren, A. T., Garside, Earl, and Boice, W. A.: *The Conservative Treatment of Appendiceal Peritonitis*, Surgery 5: 813, 1939.
25. Horsley, J. S.; Horsley, J. S. Jr., and Horsley, Guy: *Appendicitis: Newer Methods of Treatment*, J. A. M. A. 103: 1753, 1934.
26. Herrick, F. C.: *Acute Appendicitis with Peritonitis*, Surg., Gynec. & Obst. 65: 68, 1937.
27. Gatch, W. D.; Gery, R. E., and Ballenger, Felix: *Management of Advanced Appendicitis in Children*, J. A. M. A. 114: 1839 (May 11) 1940; and personal communication.
28. Maes, Urban, and McFetridge, E. M.: *The Mortality of Acute Appendicitis*, New York State J. M. 38: 1205, 1938.

TABLE 3A
INCIDENCE AND MORTALITY
PATIENTS OPERATED ON PRIMARILY FOR
APPENDICITIS

POSTOPERATIVE DIAGNOSIS	1923-1940				Totals
	1923- 1925	1926- 1930	1931- 1935	1936- 1940	
RECURRENT	79	133	114	145	471
Deaths	1	0	0	0	1
SUBACUTE	46	79	91	167	383
Deaths	0	1	1	0	2
ACUTE	255	490	436	912	2,093
Deaths	1	2	2	0	5
GANGRENOUS	141	204	161	291	797
Deaths	4	4	6	1	15
RUPTURED AND RUPTURED WITH ABSCESS	52	63	95	118	328
Deaths	16	16	12	4	48
TOTALS	573	969	897	1,633	4,072
Deaths	22	23	21	5	71
Mortality Rate	3.84%	2.38%	2.34%	0.31%	1.74%

ing operation for some other pathologic condition, leaving 4,859 patients operated upon primarily for appendicitis. The records of the first 787 cases (1917-1922) unfortunately lack certain information and completeness pertinent to analysis and are omitted from the tables. From January 1923 through December 1940, 4,072 patients were operated on for appendicitis. Of these 11.6 per cent were classified as recurrent; 9.4 as subacute; 51.4 as acute; 19.6 as gangrenous; and 8.0 as ruptured, some having formed appendiceal abscesses (Table 3A). The diagnosis recorded is the postoperative one made by the surgeon. There was a total of 71 deaths in these cases, or a mortality rate of 1.74 per cent. One notices a steady decrease in mortality rate from 1923, the most noticeable decrease being during the last five years, the rate being only 0.31 per cent.

TABLE 3B
INCIDENCE AND MORTALITY
PATIENTS OPERATED ON FOR ACUTE APPENDICITIS
WITH PERFORATION AND ACUTE APPEN-
DICITIS WITH ABSCESS

	Frequency	Deaths	Mortal- ity Rate
1923-1925	52	16	30.8%
1926-1930	63	16	25.4%
1931-1935	95	12	12.6%
1936-1940	118	4*	3.4%
TOTAL 1923-1940	328	48	14.6%

*Omitting two cases (Cases 4 and 5 described in text) in which the abscess was drained through a stab wound, and in which the diagnosis was not confirmed by autopsy, we have a mortality rate of 1.72% (two deaths in 116 patients).
Table 4 gives an analysis of deaths of the 71 patients. During the last five years (1926-1940) there have been only two deaths (of a total of 5) due to peritonitis; however, in the period from 1923 to 1935 there were 55 (of a total of 66) deaths due to peritonitis or its complications.

TABLE 3C
INCIDENCE AND MORTALITY
PATIENTS OPERATED ON PRIMARILY FOR
APPENDICITIS 1936-1940

POSTOPERATIVE DIAGNOSIS	Fre- quency	Percent of Total	Deaths	Mortali- ty Rate Per Cent
RECURRENT	145	8.9	0	0
SUBACUTE	167	10.2	0	0
ACUTE	912	55.9	0	0
GANGRENOUS	291	17.8	1	0.33
RUPTURED	88	5.4	2	2.27
ABSCESSED	30	1.8	*2	6.67
TOTAL	1,633	100.0	5	0.31

*In these two patients (Cases 4 and 5 described in text) the abscesses were drained through a stab wound only and no autopsies were performed to confirm the diagnosis. Omitting these, the mortality rate would be 1.72 per cent (2 deaths in 116 patients).

The decrease in mortality in all types of cases can be accounted for mainly by the decrease in mortality in the perforated type of appendicitis (Table 3B). The percentage of ruptured cases admitted has not appreciably decreased since 1923, but the mortality rate in this type has decreased considerably (30.8 to 3.4 per cent). If two cases are omitted in which the diagnosis was not confirmed by autopsy, there would be two deaths in 116 patients or a mortality of 1.72 per cent.

Since January 1936 through December 1940, we have operated on 1,633 patients for appendicitis. The incidence of the different types of appendicitis is shown in Table 3C. Our percentage of ruptured cases (7.2%) is not as high as that of some hospitals. There

TABLE 4
ANALYSIS OF DEATHS IN 4,072 SURGICAL CASES
(1923-1940)

	Totals	*Autopsies	Abscessed	Ruptured	Gangrenous	Acute	Subacute	Chronic
Pneumonia	3		1		1		1	
Peritonitis	1			1				
Peritonitis and ileus	41		8	24	7	1	1	
Peritonitis and splenitis	2	2		2				
Peritonitis and liver and subdiaphragmatic infections	12	2	5	3	3	1		
Peritonitis, involvement of kidney, liver and spleen	1	1		1				
Peritonitis with sloughing of wall and bowel	2	1	2					
Intermesenteric abscess, sudden death, undetermined	1				1			
Myocarditis	1				1			
Hemorrhage from sloughing of abdominal wall	1			1				
Hemorrhage from sloughing of mesoappendix	1	1			1			
Acute dilatation of stomach	1	1			1			
Mass in upper abdomen (no autopsy)	1					1		
Sudden death at completion of operation—undetermined	1					1		
Mechanical obstruction	1					1		
Pulmonary embolism	1							1
Totals	71	8	16	32	15	5	2	1

*No autopsies were obtained prior to 1931.

were no deaths in the recurrent, subacute and acute types; one death in the gangrenous; two in the ruptured; and two in the abscessed cases. Omitting the chronic recurrent and subacute groups, we have a mortality of 0.39 per cent among 1,321 cases of acute appendicitis.

We have had in all seven deaths from appendicitis (diagnosis made by symptomatology, operation or autopsy) during the last five years. The five deaths included in the tables may be divided into two groups. In three patients, the diagnosis was confirmed at operation when appendectomy was performed.

Case 1. A white girl, aged 5, was found to have an acute gangrenous appendix at the time of operation. She developed double pneumonia and died six days after operation.

Case 2. A negro male, aged 38, had a ruptured retrocecal appendix. There was free pus with fecal material in the abdominal cavity, and no attempt was made by nature to wall-off the infection. Death, which was caused from spreading peritonitis, occurred on the fifth postoperative day.

Case 3. A white boy, aged 9, was brought to the hospital in a moribund condition. He had been given calomel, salts, castor oil and milk of magnesia. After consultation, it was decided that the child could not live without operation. He was carefully prepared and operated on one hour and 45 minutes after admission. His pulse rate at the beginning of the operation was 160, respiratory rate, 36; at completion of operation pulse was 108, respiration, 22. He was on the operating table only 10 minutes. He died about 22 hours after admission.

The next two cases were diagnosed as appendiceal abscess, but the diagnosis was not confirmed at operation or by autopsy.

Case 4. A white man, aged 36, gave a history of having had abdominal pain for five days. He was vomiting fecal material and had all the symptoms of acute intestinal obstruction. A localized fluctuating mass filling the lower right quadrant was palpated. A diagnosis of acute intestinal obstruction due to adhesions from appendiceal abscess was made. A small extraperitoneal stab wound was made just inside the crest of the ilium and a large amount of offensive pus, which was under great pressure, was let out, and a drain inserted. The patient continued to vomit fecal material and died two days later. No autopsy was performed. Our diagnosis was death from acute intestinal obstruction, probably due to appendiceal abscess.

Case 5. A white girl, aged 16, was admitted to the hospital complaining of a soreness in her side which had begun seven days previously. There was a definite localized mass just above the brim of the pelvis that extended into the pelvis, which

was diagnosed as appendiceal abscess. This was drained through a small stab wound (extraperitoneal). The following morning the patient had a sudden rise of temperature (105.5). Rales were noted throughout the base of the lungs. She was diagnosed as pneumonia and put under an oxygen tent and given sulfapyridine. She died about 42 hours after operation. No autopsy was performed.

The two other cases, not included in the tables, may be summarized as follows:

Case 6. A white man, aged 50, was admitted to the medical service in a semiconscious condition. He died six days after admission, no definite diagnosis having been made. Autopsy revealed a ruptured postperitoneal appendix with spreading infection in the postperitoneal tissues.

Case 7. A negro woman, aged 56, was admitted to the hospital in a moribund condition. On examination there was found a large fluctuating mass in the lower abdomen that could be palpated through the cul-de-sac, diagnosed as pelvic abscess. The cul-de-sac was punctured and a large amount of pus was drained. Four days later she died. Autopsy revealed a gangrenous appendix with perforation, cul-de-sac and multiple peritoneal abscesses.

SUMMARY AND CONCLUSIONS

At the beginning of the year 1923, with the cooperation of the surgical staff and other members of the Norwood Clinic, we began to make a careful study of patients with appendicitis in an effort to lower the mortality rate. We emphasized especially the importance of a correctly taken history for we believe that the five cardinal symptoms described by the late John B. Murphy are pathognomonic of appendicitis. All patients who have appendicitis do not have these symptoms, but in those patients who do have them (about 68 per cent in our series), we have found the diagnosis to be appendicitis in every case. From our experience, we have found that in the other 32 per cent whose symptoms are not the five cardinal ones described, there was evidence of previous attacks of appendicitis or the appendix was located in an abnormal position (retroperitoneal, pelvic, etc.). In an effort to have these symptoms designated correctly, we devised a form (Fig. 1) which is filled out on every patient suspected of having an acute condition of the abdomen by the interne or resident and checked by the surgeon.

Since 1923, there has been a steady decrease in mortality rate, which is most marked during the last five years (0.31 per cent in all types of appendicitis). This decrease is a reflection of the marked decrease

in the ruptured and abscessed cases (from 30.8 to 3.4 per cent). Omitting two abscessed cases in which the diagnosis was not confirmed at operation or autopsy (Cases 4 and 5 described in text), we have had, during the last five years, only 2 deaths among 116 patients with perforation and/or abscess, a mortality rate of 1.72 per cent. During this entire period we have always advocated immediate operation, and have operated on every case of appendicitis as soon as possible after it was diagnosed as such.

Some of the points we have emphasized which we believe to have helped lower the mortality rate in acute appendicitis are:

1. Importance of a correctly taken history and careful physical examination so that an early diagnosis can be made.

2. Insistence that the family physician does not procrastinate, and if he is doubtful about diagnosis, gets a competent consultant.

3. Recognizing the fact that in patients where the onset of symptoms is severe and the cycle of symptoms is completed in a short time, the appendices are more likely to become gangrenous and rupture; hence delay in operating should be minimized.

4. Carrying out rigid postoperative care, especially in patients with ruptured appendices.

5. Assigning patients with peritonitis to only the most thoroughly trained and experienced surgeons.

Although we have always advocated immediate operation in all patients diagnosed as appendicitis regardless of the phase of the disease or the age or condition of the patient, and have obtained very good results in this type of treatment, we cannot ignore or be unimpressed by the excellent results which have been obtained by some of the outstanding advocates of the conservative regimen. This forces us to the conclusion that morbidity and mortality in patients with appendiceal peritonitis depend entirely on the experience, skill and surgical judgment of the physician.

The Gastric Problem—Let it not be thought that we are unaware or unappreciative of the advantages that may accrue from present and future gastroscopic studies. We are fully cognizant of their implications. We do feel, however, that on insufficient or misunderstood evidence an enhanced idea of the frequency and importance of gastritis is being engendered.—*Howard and Martin, South. M. J., Sept. '41.*

DIAGNOSIS AND TREATMENT OF PREECLAMPSIA*

By

REDDING EMENS, M. D.

Decatur, Alabama

Eclampsia, long a symptom of toxemia, has been dreaded and, in a large percentage of cases, fatal. Its real cause still remains a mystery. Recent publications have made an effort to classify contributory factors as renal, endocrine, hepatic and vascular.

The field of internal medicine has been the branch which has thrown more light on this subject, in my opinion, than any other, and it is through this branch that the control and prevention of toxemia really lie. If it were possible to have every expectant mother classified before pregnancy takes place, and the patient have the advantage of competent prenatal care, a large percentage of these cases would be prevented.

We, who are dealing with the pregnant woman, realize full well our responsibility in the care of these patients, but, at the same time, realize our inability to surround ourselves with the necessary equipment to make scientific classifications which would be of real benefit. I repeat, therefore, the need of medical assistance.

Let us consider preeclampsia, its diagnosis and treatment as the main factors in the prevention of eclampsia from the obstetricians' point of view. The condition is usually seen in the latter trimester of pregnancy, and is characterized by:

(1) Excessive gain in body weight throughout pregnancy; early as water retention, late as frank edema.

(2) Low or normal blood pressure early, followed by a suddenly climbing blood pressure in the last trimester.

(3) Normal urinary findings early, followed by albuminuria in the latter months.

This group of signs, unless checked, will eventually be complicated by anuria and convulsions.

In the average obstetric practice, the patient has not been classified or placed in any specific group. It is therefore necessary to take a careful history to ascertain any evidence of preexisting renal, cardiovascular, endocrine or hepatic disease. Of these, neph-

ritis is to be dealt with, either as the cause of symptoms, complicating symptoms, or to be ruled out in favor of preeclampsia.

The urine is an index which may lead to prenatal diagnosis. Here we find in eclampsia a urine which boils almost solid with albumin (serum albumin) before the anuritic stage is reached. There is a conspicuous absence of red blood cells. However, hyalin and granular casts may be found in large numbers.

Along with the urinary examination, the eye grounds should be watched, and if progressing in accordance with the urinary findings, steps should be taken to relieve the patient short of eclampsia. In dealing with true eclampsia, when pregnancy is terminated, either by spontaneous or induced labor, a sharp diuresis is noted, with a corresponding reduction in fluid retention. Along with this, blood pressure and albuminuria are greatly reduced. If, however, there is an existing nephritis, such fluid loss is not seen. The blood pressure and albuminuria remain high, with a gradual diminution over a period of weeks, or even months.

The symptoms in such a case are few. Dull headaches, spots before the eyes, and tightening of the rings on the fingers are generally noted. If severe headaches and pain in the epigastrium are present, one is to look for approaching danger.

In my series of some thirty cases of preeclampsia, I have watched them run along in a normal course through the fifth or even sixth month, except for gradual water retention, and at this stage have a sudden gain in body weight, followed by increasing blood pressure which produced headaches, also a one or two plus albumin. (I wish to state here that this picture may be overlooked for a short time, if a chart is not kept of each successive examination.) It is imperative that treatment should be started at once to prevent a gradual increase of symptoms which surely will lead to eclampsia in a great many cases.

In the past it has been customary to put the patient on a protein-free diet and to exclude the chloride radical, also to restrict fluids and to give large and repeated doses of magnesium sulphate.

In following the above routine we have blindly but correctly added to the treatment copious amounts of buttermilk which really

*Read before the Association in annual session, Mobile, April 15, 1941.

defeated the thing we had in mind; that is to say, milk contains a large amount of protein which prevented many cases of preeclampsia from entering the role of true eclampsia. Along this line salt was excluded from the diet but sodium bromide was given for sleep, or rectal irrigations with bicarbonate of soda. All of which means that it is not the chloride radical we fear, but the sodium radical.

At present my routine in the milder cases of preeclampsia (edema, slight elevation of pressure and about a one plus albumin) is as follows: (1) addition of protein and carbohydrate to the diet; (2) rest; (3) magnesium sulphate, drams two before breakfast; and (4) limit the amount of sodium chloride. These patients come to the clinic every week until symptom free, and then every two weeks unless symptoms return, or they are delivered.

If symptoms do not improve or if they progress, the patient is put to bed at home with the following instructions: (1) Further limitation of diet; (2) sodium chloride eliminated entirely; (3) luminal, grains one-fourth to one-half three or four times daily; (4) magnesium sulphate as mentioned above; and (5) complete bed rest. The patient is watched carefully for two or three days, and, if symptoms increase, magnesium sulphate and twenty to fifty per cent glucose solution are given intravenously. If symptoms continue to progress, medical induction of labor is done regardless of the stage of pregnancy. In carrying out this plan of treatment, we have not allowed any one of the thirty cases to progress to true eclampsia.

For example, Mrs. O. A., white primipara, married, twenty years of age, was seen in the clinic at the end of the first month of pregnancy. She gave a history of having had normal periods since thirteen years of age. Had no kidney complications; basal metabolism a plus eight. Her first visit showed a weight of $112\frac{1}{4}$ pounds, blood pressure 132/60, negative urine. She ran along in normal course until the beginning of the fifth month of pregnancy, at which time her weight gain was seven pounds in twenty-six days, and blood pressure jumped from 120/60 to 140/70, with negative urine. She was put on a restricted salt diet and a moderate increase in protein, and advised to

return in two weeks. In two weeks her weight was 128, blood pressure 160/72, and urine negative. Salt was restricted entirely from her diet and protein intake pushed. Magnesium sulphate was given by mouth each morning, and she was requested to return in one week. The next visit one week later showed her weight 129, a pound gain, and blood pressure had dropped four points. She was put to bed at this time for one week, and the gain was $1\frac{3}{4}$ pounds which brought her weight to $130\frac{3}{4}$, blood pressure 148/84. The urine remained negative. The weight gain was not unusual until the last month of pregnancy. January 27, 1941 her weight jumped from 143 to $148\frac{1}{2}$; blood pressure from 124/80 to 150/90, and urine showed a plus four albumin. At this time she was put back to bed and magnesium sulphate given every four hours. Protein was increased to a maximum in her diet, but her symptoms continued to hold on with a gradual increase in weight and persistent blood pressure well above normal, and albuminuria remaining four plus. At this point medical induction of labor was done, and an eight and three-quarter pound boy delivered spontaneously eighteen hours later.

Following the delivery the blood pressure was 140/70, and gradually decreased until on the fourth day it was well within the limits of normal. Her general edema was gone, and the urinalysis, both chemical and microscopically, was clear.

Conclusion: Preeclampsia, not complicated.

I feel that this procedure has been the means of checking the progress of symptoms in most of these cases, to the extent that they went to term and spontaneous delivery. In eight cases medical induction of labor was done because symptoms progressed to a point that I felt it was unsafe to allow them to go further. All were carried well past the seventh month, and a viable baby.

There were no maternal deaths, and only two fetal deaths in this series.

INFANT MORTALITY

Since infant mortality in the past has been a major problem in the toxic mother, I wish to state my opinion of the advantage of the above type treatment. In twenty-eight patients that symptoms were controlled, all delivered healthy and normal babies. In the case of the two stillbirths, symptoms pro-

gressed in spite of treatment as will be illustrated by the following histories.

REPORT OF CASES

Case 1. Mrs. C. B., white, primipara, married, twenty-three years of age, was seen in the clinic at the beginning of a three months pregnancy. Weight was 261½ pounds. A complete physical examination was made, blood pressure 154/90, urine essentially negative. Other findings negative. Later a basal metabolism was minus twenty, blood findings normal.

Two weeks before estimated term, weight increased seven pounds in less than one week; blood pressure was 170/98, headaches severe; about a two plus albumin in urine. At this point the patient was brought into the clinic and put to bed and given magnesium sulphate, drams two every four hours, limited amount of fluids, and fifty per cent glucose. This procedure did not reduce symptoms, and after twenty-four hours the patient began to have pains. At this time the fetal heart could not be heard, and the patient was in doubt about fetal movement. Twelve hours after labor pains began, she delivered spontaneously a dead fetus which apparently had been dead two or three days.

The patient gradually improved, but the blood pressure remained high and there was slight albumin in the urine for several weeks.

Conclusion: Endocrine involvement and chronic nephritis.

Case 2. Mrs. W. R. R., white, primipara, thirty-two years of age, was seen in the clinic June 10, 1940. Had had high blood pressure for several months before becoming pregnant. She was treated for a while for this condition. Her medical and menstrual history was negative except for high blood pressure.

Physical examination was negative. Weight on the above date was 178¾; blood pressure 128/79, urine negative.

Because of the history of high blood pressure the patient was put on a high protein diet with a liberal amount of carbohydrates and watched carefully her entire prenatal period. Weight and blood pressure varied only when diet was omitted, until the last month of pregnancy. At this time, January 3, 1941, her pressure went from 122/85 to 150/90; two weeks later from 150/90 to 172/80. At no time was there albumin in the urine. The weight varied very little.

On February 6, 1941 at 9:00 P. M. patient went into a normal labor at term. The bag of water ruptured at 12:00 midnight and the head entered the pelvis in an occiput posterior position. The fetal heart was heard at 12 noon February 7, 1941 for the last time; at 5:00 P. M. February 7, 1941 a mid-forceps delivery was done after the head had rotated occiput anterior, and a dead fetus was delivered at 5:20 P. M.

Conclusion: Cerebral hemorrhage.

From my small series of cases, my conclusion is that, if we do not permit these cases to progress far enough to endanger the

mother, we will deliver viable infants by early induction in a great majority of cases.

SUMMARY

1. Toxemia is seen primarily in young primiparas.

2. It is usually seen in the last trimester.

3. Blood findings do not vary far from normal in uncomplicated toxemias.

4. Increase in weight precedes rise of blood pressure in true eclampsia.

5. The gain in weight is usually sudden, followed by sudden rise in blood pressure.

6. Albuminuria varies in amount, depending on the degree of toxemia.

7. Blood pressure above 140 systolic should be considered a sign of toxemia.

8. May be controlled by high protein diet in a large percentage of cases. Suggested available diet: one quart to half gallon of buttermilk; four to six eggs; one or two patties of lean meat, and a limited amount of carbohydrates daily.

9. In patients who do not respond, and whose symptoms increase, induction of labor should be done regardless of the stage of pregnancy.

10. Proper classification may help to prevent a great many toxemias.

11. Just what part endocrinology plays is not clear, and, like the internist, any information the endocrinologist may contribute will aid in clearer understanding and better treatment.

DISCUSSION

Dr. Hayes Williams (Fairfield): I have enjoyed this practical paper and wish to congratulate Dr. Emens on the excellent care he has taken of his preeclamptic patients and the results obtained.

Dr. Emens has informed me by personal communication that this series of thirty preeclamptic patients includes all severe toxemias from 1800 cases, a percentage of 1.6. Doherty of Cook County Hospital quotes 9 per cent. At our hospital in Fairfield during the past four years the eclamptic and preeclamptic groups combined in 3186 deliveries have been 6.1 per cent for 1937 and 1938, and 2.9 per cent for 1939 and 1940. During the last two years we have followed a procedure, with very slight variations, similar to that presented by Dr. Emens.

The statement that toxemia is seen primarily in primiparas should include a certain percentage of multiparas who have become overweight with a previous pregnancy and have not regained previous prepregnancy weights.

Weight and blood pressure increases are known factors, also albumin in the urine. The question of edema in toxemia is a very common one. Do

not consider every case of edema as a toxic case. Some of the edemas, we believe most of them, result from too much sodium in the diet. The salt-free diet should be a sodium-free diet. It is surprising how many women take alkaline powders containing sodium, especially with our radio advertising programs as they are.

Hypoproteinemia, we believe, also plays an important part in the picture, even though the non-protein nitrogen in blood chemistry is essentially normal. Strauss of Boston and Dr. Dodge and her associates have shown excellent results in preeclamptic treatment by increasing the protein intake to 100 gms. or more and limiting sodium. For the past two years we have been using high protein diets, 80 to 100 grams, and sodium free or limited, if albumin is present and there is edema accompanied by any other preeclamptic signs. Our combined preeclamptic and eclamptic patients have decreased from 6.1 per cent to 2.9 per cent, the eclamptic decreasing 50 per cent since this regimen was started.

We feel also that a certain percentage of patients who are overweight before conception or after repeated pregnancies are definitely endocrine unbalanced patients, patients whose weight may be controlled or partially controlled by thyroid therapy. These patients consistently reveal low blood sugar in most cases and seem to be benefited by thyroid substance in doses of two to four grams a day until tolerance is reached, tolerance being determined by pulse and nervous symptoms rather than by metabolic rate. Dr. Charles Mayo has stated that no patient has ever had eclampsia who has an enlarged thyroid gland.

For the patient developing eclampsia, we have followed a conservative method of treatment with termination only after convulsions have been controlled, and cesarean sections only in certain types of fulminating cases.

DRUGS IN INFANCY AND EARLY CHILDHOOD*

DOSAGE AND ACCURATE ADMINISTRATION

By

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It has been said that in the practice of pediatrics you guess the weight of a child, guess his susceptibility, guess his sensitivity, guess what drug to use and how much to give. This would seem a hopeless proposition. However, in defense of pediatrics, with the exception of guessing at the dose and how to order it given so the baby will receive the amount you guessed it should have, the preceding witticism seems quite

as applicable to the treatment of diseases of adult life.

Babies and children have, of course, always been subject to sickness. No doubt, our earliest forefathers in medicine made allowance for their relative size and gave them smaller doses of whatever remedial agents were currently being employed. Naturally, also, the relative weakness and immaturity of these young patients, as compared to the adult, suggested a further reduction in dosage. This latter hypothesis is now considered to have been unduly stressed. However, our impressions regarding susceptibility in infancy and early childhood are not as yet entirely clear.

RELATIVE SIZE

The simplest way to determine size is by weighing. Of course, it is not practical to weigh a child that is sick in bed, and, after all, the exact weight is not necessary. The averages at different ages are considered sufficiently regular to furnish a satisfactory basis for estimation of proportion. A rule can serve only as a general approximation but this in itself is a great service. With certain drugs the physician feels that his patient may take what the rule indicates or perhaps more; with others, a smaller proportion may seem advisable. What his consideration revolves about is the approximate measurement or fraction that the rule has given him.

The varying average weights at different ages are available in all textbooks, but to carry them in one's memory is not practical. To relieve the doctor of this burden, several rules, using the age as a vicarious weight factor, have been devised. A discussion of these rules will be taken up later.

SUSCEPTIBILITY

For years it was considered that extreme youthfulness called for a reduction in dosage below the relative size or weight of the patient—that youthful susceptibility be taken into consideration when medicine of any kind was being administered. Fried's, Cowling's and Dilling's rules bear evidence to this. It is easy to understand this attitude when we consider that variation in potency of drugs was a condition constantly to be reckoned with until recent years. Experience taught the profession that there were notable exceptions such as purgatives, arsenic and belladonna. With the passing of

*Read before the Association in annual session, Mobile, April 15, 1941.

time it has become evident that many ordinary medicines can and should be given in proportional doses, that is, in the proportion of the child's weight to the adult. Among these are antipyrine, phenacetin and sodium and potassium bromide, drugs which, had experience not given us proof of tolerance, might well be considered to belong among those to which a baby would likely be susceptible.

The drugs that have caused most concern, however, are the different preparations of opium. There is agreement among textbooks that, especially in the early months of life, these should be given with great caution and the doses suggested are quite conservative. Taking paregoric as an example, some doses suggested are one minim at one month, one or two minims at three months, three to ten minims at one year, etc. In contrast, Neff, in a special article¹ sponsored by the U. S. Pharmacopeial Committee of Revision in the Journal of the American Medical Association, recommends the dosage shown in Table 1.

TABLE 1

Age in Weeks	Pheno-barbital Sodium	Codeine Sulphate	Camphor-ated Tinct. Opium
	Grain	Grain	Minims
2	1/6	1/20	10
4	1/5	1/15	15
8 to 20	1/4	1/12	20

The individual physician makes his own choice of medicines. When using one that is new to him he is cautious until he has acquired first hand knowledge of its action. His adult patients differ in their response to medicines; like differences obtain among babies and small children, with the added hazard that these small patients probably have less ability to react after overdosage.

It is worth while, when administering any potentially dangerous drug where one is uncertain about the proper amount to be given, to make a further reduction in the weight proportion dose. When the rule itself makes such reduction, it is of little or no value for administration of the many drugs which babies and children tolerate well. It is reasonable to assume that any essentially youthful susceptibility is greatest at birth, gradually disappearing with growth and the passage

of time. Griffith's² proportional doses and Young's rule indicate 90 per cent of the weight proportion at three years and 80 per cent at two. Griffith also suggests 1/10th of the adult dose at one year which is 70 per cent of the weight fraction. A logical continuation of the downward trend would be about 60 per cent at seven months and 50 per cent at birth. Such reductions in weight proportion fractions are not in harmony with present ideas regarding dosage of many drugs which children take well. The percentages, however, would seem useful for tentative administration of opiates or other potentially dangerous drugs. Used to modify actual weight proportion doses and not the rule, the rule itself is relieved of making any allowance for youthful susceptibility.

DOSAGE RULES

A rule giving fractions of the adult dose proportionate to the patient's size as compared to adult size furnishes a basis for administration of many medicines in harmony with present medical opinion. Where it is thought that a baby should have less of some particular medicine than such proportion, the rule serves in establishing a dose from which to make the reduction.

Clark's rule requires use of the patient's weight (actual or average) in pounds and for that reason is not practical for general use. In other words, the weight curve is not easily committed to memory. It, however, furnishes a convenient yardstick by which other rules may be evaluated. With the exception of Clark's, all rules for estimating doses at different ages use digits indicating the months or years of ages in their several formulas. With Cowling's and Dilling's rules, an age fraction seems intended, the denominators 24 in one and 20 in the other standing for the age of mature growth. With Fried's, Young's and Bastedo's rules, the age is obviously used to identify the dose and at the same time supply a gradually increasing factor to make the dose larger as the age increases. Between the ages of one year and twelve, the advances in age and weight are sufficiently parallel to make it possible for a rule to give approximately satisfactory answers; but while the passage of months

1. Neff, Frank C.: The Treatment of Colic in Infants, J. A. M. A. 114: 1745-1748 (May 4) 1940.

2. Griffith, J. P. C., and Mitchell, A. G.: The Diseases of Infants and Children, Philadelphia, W. B. Saunders Company, 1938.

TABLE 2.—RULES AND FRACTIONAL DOSES

UNDER ONE YEAR														
Month of Age	1	2	3	4	5	6	7	8	9	10	11			
Fried's Rule	1/150	1/75	1/50	1/38	1/30	1/25	1/21	1/19	1/17	1/15	1/14			
Griffith's Proportional Doses	1/30	1/30	1/30	—	—	1/20	—	—	1/15	—	—			
Clark's Rule	1/17—	1/14	1/12	1/11	1/10	1/9	1/9+	1/8—	1/8	1/8+	1/7—			
Complement to Bastedo's Rule	1/17	1/14	1/12	1/11	1/10	1/9	1/9	1/8—	1/8	1/8+	1/7—			
ONE YEAR AND OVER														
Year of Age	1	2	3	4	5	6	7	8	9	10	11	12	15	18
Cowling's Rule	1/12	1/8	1/6	1/5+	1/4	1/3—	1/3	2/5—	2/5	1/2—	1/2	1/2+	2/3	3/4
Dilling's Rule	1/20	1/10	1/7+	1/5	1/4	1/3—	1/3+	2/5	1/2—	1/2	1/2+	3/5	3/4	9/10
Young's Rule	1/13	1/7	1/5	1/4	1/3—	1/3	1/3+	2/5	2/5+	5/11	1/2—	1/2	5/9	3/5
Griffith's Proportional Doses	1/10	1/7	1/5	1/4	—	1/3	—	2/5	2/5	2/5	—	1/2	—	3/4+
Clark's Rule	1/7	1/6	1/5+	1/4—	1/4+	1/3—	1/3	1/3+	2/5	2/5+	1/2—	1/2	3/4	1—(?)
Bastedo's Rule	1/7—	1/6	1/5	1/4—	1/4+	1/3—	1/3	1/3+	2/5	2/5+	1/2—	1/2	3/5	2/3+

and years is in regular mathematical progression, growth in avoirdupois is at times fast and again slow. Thus in the first year of life the gain is about 14 pounds. Thereafter, until twelve, the average yearly increase in weight is about 5 pounds. With the advent of puberty, for several years the gain is from 10 to 12 pounds annually.

Table 2 shows that from one to 12 years Bastedo's rule gives practically the same doses as Clark's weight fractions. It is more

accurate in its weight proportions than Young's and has a wider range of usefulness. Above this age, the sudden rise of the weight curve breaks the close relationship of the two rules. This could be compensated for by using a larger factor for the *three* in the numerator of Bastedo's rule. However, it would complicate the rule unnecessarily and arbitrary weight fraction rules after puberty do not seem important. Individuals show much variation in size and develop-

TABLE 3.—RULES FOR DOSAGE
UNDER ONE YEAR

Fried's Rule:	Adult dose x	Patient's age (months)	= Patient's dose
		150	
Clark's Rule:	Adult dose x	Patient's weight (lbs.)	= Patient's dose
		150 lbs. (adult weight)	
Complement to Bastedo's Rule:			
(a) 1 to 6 Mos.:	Adult dose x	Age in months + 5	= Patient's dose
		100	
(b) 7 to 8 Mos.:	Adult dose x	Age in months + 4	= Patient's dose
		100	
(c) 9 to 11 Mos.:	Adult dose x	Age in months + 3	= Patient's dose
		100	
ONE YEAR AND OVER			
Cowling's Rule:	Adult dose x	Age next birthday	= Patient's dose
		24	
Dilling's Rule:	Adult dose x	Age in years	= Patient's dose
		20	
Young's Rule:	Adult dose x	Age in years	= Patient's dose
		Age + 12	
Clark's Rule:	Adult dose x	Patient's weight	= Patient's dose
		Adult weight (150 lbs.)	
Bastedo's Rule:	Adult dose x	Patient's age + 3	= Patient's dose
		30	

ment at this time and the attending physician's judgment of the dosage indicated in each particular case should be the best guide.

There is a particular difficulty in devising a rule giving approximate weight proportion doses for the different months during the first year. A baby gains about 9 pounds during the first half year and only about $4\frac{1}{2}$ pounds during the latter half. Thus the ratio between increase in age and increase in weight changes several times during the year, and to fashion a rule to give weight proportions, it is necessary to change the degree of progression of the rule with each change in weight trend. Thus, from shortly after birth to 6 months, the monthly gain is practically the same. During the next 2 months it is lower, and during the last 4 months the average gain is smaller still. A rule with a changing factor to compensate for this weight difficulty during the first year is described in Table 3. The fractions obtained practically parallel the doses found by Clark's rule, and with Bastedo's it provides a method of finding the weight fractions from birth to the age of 12.

It is, of course, recognized that some medicines should be given in larger amount than the size or weight of the patient suggests. A rule cannot relieve the doctor of the burden of being familiar with the irregular infant dosage of certain medicines and the surprising dosage recommended for certain new drugs being introduced from time to time; as, for instance, the sulfonamides.

TABLE 4
SUGGESTED TOLERANCE PERCENTAGES
INFANCY AND EARLY CHILDHOOD

At birth	50% of weight proportion
7 months	60% of weight proportion
1 year	70% of weight proportion
2 years	80% of weight proportion
3 years	90% of weight proportion
4 years	100% of weight proportion

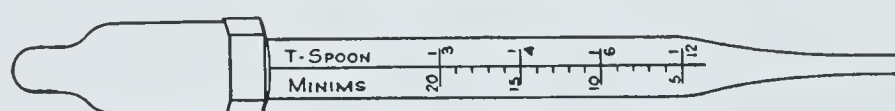
ADMINISTRATION

The doses of medicines administered to babies usually are and should be small in volume. They should be small on account of the size of the patient, less being required, also, because it is easier to administer a small volume than a large one. When drugs are prescribed in powder or tablet form, it is an easy matter to give any dosage desired. With liquid medicines the measuring of definite small amounts is not so simple. However, liquids offer the particular advantage that the dose may be reduced or increased

in any proportion or as gradually as desired. Sirupy and alcoholic vehicles are frequently used in prescriptions and both are objectionable if not given in small volume. Cough sirups and tinctures should not be prescribed diluted with water. There is likelihood of precipitation or spoiling, so it is not safe to reduce dosage in this way.

In the family doctor's practice, occasions arise when it is desirable to give as many as three or four in a family the same medicine, e.g., cough syrup, from the same bottle, a teaspoonful of which represents the adult dose. The teaspoon could not have been fashioned to make the estimation of $\frac{1}{2}$, $\frac{1}{3}$ rd or $\frac{1}{4}$ th, etc., more difficult, so in such cases the doses for the younger members are likely being measured in drops, which have no regular definite volume. Under rare conditions a drop may equal a minim but usually only from $\frac{1}{3}$ rd to $\frac{2}{3}$ rds that much, hence neither of these instruments is to be relied upon for accurate small doses.

Fig. 1—Posometer



For dispensing small doses of liquid medicines, the instrument³ shown in Figure 1 is suggested. It differs from the ordinary medicine dropper only in having a larger bulb and in the graduation. The dose, of course, is measured by drawing the liquid up to the level of the fraction of a teaspoonful or the number of minims one desires to give.

SUMMARY

A rule for obtaining weight proportion dosage fractions from one to 11 months is submitted. This rule complements Bastedo's, the two covering infancy and childhood to the age of 12 years, indicating practically the same dosage as those obtained by Clark's rule.

An interesting feature of the rules suggested is that they may also be used to determine the approximate average weights throughout infancy and childhood. This may be done by multiplying the dosage fractions by 150.

A posometer for accurate measurement of small doses of liquid medicines is described.

3. Posometer (Po-som'e-ter)—G. posos, how much + metron, measure), an instrument for measuring doses—Distributed by the Birmingham Apothecary.

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ALABAMA'S 1941 POLIOMYELITIS EPIDEMIC

As this issue of The Journal goes to press, Alabama is experiencing the worst poliomyelitis epidemic, as far as reported cases of the disease are concerned, in her history. The pattern of incidence being followed is markedly different from that followed in 1936 in that, whereas the peak at that time was reached in the second week of July, the largest number of cases ever reported in a single day was reported last August 20. Cases reported between January 1 and August 30, inclusive, numbered 517, 126 more than those reported during all of 1936.

Poliomyelitis deaths reported this year through August 30 totaled only 40, of which 19 were reported prior to August 1. Eighteen deaths were reported from January 1 to August 1 of 1936 and 40 during the entire year. The relatively low mortality of the present epidemic is believed to be due to the fact that the disease is of a somewhat less virulent type than formerly. The rapidly increasing incidence during a period when, five years ago, there was a rapid decline, is expected to increase the total 1941 mortality considerably beyond that for 1936.

The public health agencies have of course responded promptly and effectively to this danger. Upon instructions from the State Health Officer, county health officers began making immediate reports by telegraph of all new cases early in July and shortly after-

ward they were also instructed to send by mail complete reports of poliomyelitis deaths occurring up to that time and to report all future deaths by telegram. Members of the staff of the State Department of Health, including the two pediatricians attached to the central organization, have been available for consultation regarding individual cases and have assisted other physicians in the examination of persons suspected of having the disease. County health officers have been instructed to cooperate wholeheartedly with private physicians in their communities in dealing with the epidemic locally.

The State Department of Health has enjoyed the hearty and complete cooperation and assistance of the United States Public Health Service, the National Foundation for Infantile Paralysis, the State Department of Education, and other groups. The National Foundation for Infantile Paralysis now has at work in the state Dr. Albert E. Casey, a member of the medical faculty of Louisiana State University. Drs. James Trask and John R. Paul, of the Yale University Medical School, have also been in the state. All three of these experts have been on leave from their teaching duties for service with the Foundation. The Foundation also loaned four artificial respirators, or "iron lungs," for use in this state and is to furnish a special orthopedic nurse for the treatment and aftercare of poliomyelitis victims. The United States Public Health Service sent to this state Dr. A. G. Gilliam, a poliomyelitis expert on the staff of its National Institute of Health. The Crippled Children's Division of the State Department of Education has increased its regular nursing staff from two to four in order to provide proper nursing care for those who contract the disease and has expressed a willingness to increase it still farther if need be. The special orthopedic nurse already referred to will be attached to that division.

Cases have been reported from all but 11 counties since the first of the year, the fortunate 11 being Bibb, Choctaw, Clarke, Clay, Coffee, Coosa, Covington, Crenshaw, Henry, Limestone and St. Clair.

Cases reported by counties thus far this year (through August 30) were as follows:

Autauga, 2; Baldwin, 8; Barbour, 3; Blount, 2; Bullock, 1; Butler, 6; Calhoun, 20;

Chambers, 3; Cherokee, 4; Chilton, 5; Cleburne, 3; Colbert, 3; Conecuh, 4; Cullman, 7; Dale, 2; Dallas, 3; DeKalb, 14; Elmore, 3; Escambia, 5; Etowah, 33; Fayette, 2; Franklin, 13; Geneva, 4; Greene, 3; Hale, 2; Houston, 2; Jackson, 19; Jefferson, 116; Lamar, 1; Lauderdale, 4; Lawrence, 4; Lee, 4; Lowndes, 1; Macon, 1; Madison, 3; Marengo, 5; Marion, 18; Marshall, 9; Mobile, 10; Monroe, 9; Montgomery, 13; Morgan, 1; Perry, 3; Pickens, 14; Pike, 3; Randolph, 1; Russell, 2; Shelby, 2; Sumter, 1; Talladega, 5; Tallapoosa, 3; Tuscaloosa, 17; Walker, 86; Washington, 2; Wilcox, 3; and Winston, 1.

PSEUDOCYESIS

"Pseudocyesis, or spurious pregnancy, has been an affliction of queen and commoner with reverberations in many fields from domestic to theological. . . "

"Writers from Hippocrates to the contemporaries have lavished on the syndrome descriptive adjectives that vary from 'brain pregnancy,' to 'wind in the bowels.' Today it is defined as a condition in which the signs and symptoms of pregnancy appear or are simulated in whole or part. The clinical picture may be so exact as to deceive both patient and physician. One may add that this affliction is usually regarded as purposive on the part of the patient."

Thus does Rutherford¹ open his interesting discussion of this not-so-rare condition and he goes on to report seven cases at the Boston Lying-in Hospital from 1927 to 1940.

As to etiology, Rutherford says that "the more recent writers believe that this problem is more frequent in the emotionally unstable group. A few of Biven and Klinger's cases went on to frank mental degeneration, but the majority were reasonably normal. The grim incredulity with which the true diagnosis is resisted is pointed out as proof of an underlying psychogenic defect. The tenacity with which these patients go from doctor to doctor hoping for an encouraging diagnosis, the enthusiasm with which they prepare the *impedimenta* for their hopes, and the scorn in which they hold the luckless physician who pronounces the adverse opinion, are characteristic. . . However, the

confidence of the large majority is shaken severely when the supposed gestation is prolonged over the tenth or eleventh month." And he asserts that "the main psychologic factors involved in these cases were desire, fear, hysteria, suggestion and autosuggestion. No one factor was present in all patients."

As to diagnosis Rutherford quotes the statement of Pajot that "there are no false pregnancies, only false diagnoses." And Rutherford goes on to warn physicians against making a diagnosis of pregnancy when such is not the case, saying "certainly there is no doubt that an incorrect diagnosis is a powerful factor in convincing an uncertain patient, and an equally potent one in disconcerting her medical attendant."

The Boston investigator tells us that "the physiologic changes found in the breasts, cervix, vagina and uterus are never faithfully copied from pregnancy, but are only mild changes in that direction. One important sign is universally emphasized: The umbilicus is not the pouting one of gestation, but is the depressed umbilicus of the non-gravid state. This, combined with the alleged astonishing vigor of the fetal movements, should arouse suspicion."

"The biologic tests of pregnancy are obviously of value in questionable cases. Roentgenography, if gestation has progressed sufficiently, is of aid, although confusion may arise from calcification within a fibroid, bowel contents, and so forth. Final resort is made usually to examination under anesthesia. Steady pressure under anesthesia will reduce the abdominal distention, with release of diaphragmatic spasm, and the passage of flatus."

Rutherford has given us a well written and a thoroughgoing consideration of a subject that is both interesting and of less rare occurrence than is generally realized. It seems that the alleged rarity of pseudocyesis is largely due to lack of interest in the subject and to the fact that most practitioners who encounter such cases do not take the trouble to report them. But, whether such cases as occur get reported in the literature or not, all who engage in obstetrics should always be on the alert against being deceived by spurious pregnancy.

1. Rutherford, Robert N.: Pseudocyesis, New Eng. J. Med. 224: 639 (April 10) 1941.

**RETURN YOUR INFORMATION CARD FOR
THE DIRECTORY PROMPTLY**

About September 1, an information card will be sent from the headquarters office of the American Medical Association to every physician in the United States and Canada. The information secured is to be used in compiling the Seventeenth Edition of the *American Medical Directory*.

The directory is prepared at regular intervals in the Biographical Department of the American Medical Association. The last previous edition appeared in 1940. This volume is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States; it has been especially valuable in the medical preparedness program. In it, as in no other published directory, are dependable data concerning physicians, hospitals, medical organizations and activities. The directory provides full information concerning medical colleges, specialization in the field of medical practice, memberships in special medical societies, tabulations of medical journals and medical libraries and, indeed, practically every important fact concerning the medical profession in which any one might possibly be interested.

Before filling out the information card, read the instructions carefully. Physicians are especially urged to state whether or not they are on extended active duty for the medical reserve corps of the United States Army and Navy. Fill out the card and return it promptly whether or not a change has occurred in any points on which information is requested. If a change of address occurs before March 1, 1942, report it at once. Should you fail to receive a card before the first of October, write at once to the headquarters office stating that fact and a duplicate card will be mailed.

A NOTE TO ALL MEMBERS

Mrs. F. C. Smith, Chairman of the Auxiliary's Press and Publicity Committee, suggests that physicians take the Journal home to their wives each month so that they may read the Auxiliary section.

NEXT ANNUAL MEETING
OF THE ASSOCIATION
MONTGOMERY
APRIL 14-16, 1942

Committee Contribution**Maternal and Infant Welfare****DEATHS FROM ABORTION**

The number of deaths from abortion in Alabama in 1939 was exceeded by only two other conditions affecting the puerperal state, namely, toxemia and sepsis. It exceeded the number of deaths reported from hemorrhage. As forty-two were accompanied by sepsis, these are generally classed as deaths from sepsis but the abortion is usually the fundamental cause. There were sixteen other deaths from abortions reported or a total of fifty-eight maternal deaths in which abortion was an important factor. The number of these deaths that occur where criminal abortions have been performed cannot be separated from those that occur spontaneously. Among factors responsible for these spontaneous abortions are frequent pregnancies, poor economic conditions, and poor health; the latter often resulting from the economic status.

The prevention of a large number of these deaths from abortion could be accomplished by the supervised dissemination of proper methods of conception control. Obviously, the use of such methods would greatly reduce the number of criminal abortions. The spacing of pregnancy would also reduce the incidence of spontaneous abortions by allowing the mother to recuperate fully from previous pregnancies as well as permitting the improvement of the economic status which so often is the basic factor. The establishment of spacing clinics for spread of such knowledge in every county only awaits the cooperation of the various county medical societies. At present eighteen progressive counties in the State have some form of such a clinic.

Poliomyelitis in Detroit in 1939—During the course of an outbreak of poliomyelitis there are administrative and control practices which demand a great deal of the time of the health officer and his staff. As the number of reported cases grows it becomes increasingly more difficult to obtain epidemiological information within a short time following report of the case. It is impossible to spend the amount of time necessary to obtain the kind of information which might lead to clues. Added to this is the fact of multiple exposure, which makes the tracing of the infection a difficult one.—*Top and Vaughn, Am. J. Pub. Health, Aug. '41.*

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

SPECIMENS EXAMINED

MAY 1941

Examinations for diphtheria bacilli and Vincent's	1,318
Agglutination tests (typhoid, Brill's, undulant fever, etc.)	863
Typhoid cultures (blood, feces and urine) ..	1,166
Examinations for malaria	2,024
Examinations for intestinal parasites	5,148
Serologic tests for syphilis (blood and spinal fluid)	35,958
Darkfield examinations	40
Examinations for gonococci	2,383
Examinations for tubercle bacilli	2,070
Examinations for Negri bodies (microscopic)	61
Water examinations (bacteriologic)	991
Milk examinations	2,311
Pneumococcus typing	20
Miscellaneous	927
<hr/>	
Total 55,280	

SHIPMENT OF LABORATORY SPECIMENS

Of late, increasing carelessness on the part of physicians in the mailing of specimens to the laboratories of the State Department of Health has been observed. United States Postal Regulations require that specimens for laboratory examination be packaged in a certain manner. Failure to observe these regulations lays the sender open to legal action. To minimize this possibility the State Department of Health furnishes containers of various types which have been passed upon and accepted by the Post Office Department. Improper use of these containers is what causes trouble.

The pertinent regulations are quoted below:

Section 589—United States Postal Laws and Regulations.

3. (a) Specimens of sputum, blood, serum, spinal fluid, feces, pus, diseased tissue, or other material, fluid in nature or shipped with fluid, shall be placed in stout glass containers of suitable size (but not more than 3 inches in diameter) closed with a cork or rubber stopper of good quality or by fusing the glass.

(b) The aforesaid container shall then be placed in a cylindrical tin box, with soldered joints, closed by a metal screw cover with a rubber or felt washer. The vial or test tube in this tin box shall be completely and evenly surrounded by absorbent cotton or other suitable absor-

bent in quantity sufficient to absorb the contents of the glass container should it be broken.

(c) The tin box with its contents shall then be enclosed in a closely fitting metal, wooden, or papier-mache box or tube, at least three-sixteenths of an inch thick in its thinnest part, of sufficient strength to resist rough handling and support the weight of the mails piled in bags. This tube shall be tightly closed with a screw top cover with sufficient screw threads to require at least one and one-half turns before it will come off, and fitted with felt or rubber washer.

(d) Cultures in solid media and infectious materials or swabs shall be transmitted in a stout glass container of suitable size closed with a stopper of rubber, cork or cotton, and sealed with paraffin or covered with a tightly fitting rubber cap. The tube shall then be packed as prescribed in paragraph (c).

The attention of the medical profession of the state is earnestly directed to these regulations.

BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

B. F. Austin, M. D., Director

CHILD GUIDANCE CENTERS FOR ALABAMA

The purpose of the several child guidance centers established by the State Health Department is to help children and young people who present behavior, personality, or vocational problems. At the center they will be studied, given advice, and offered treatment.

The aim of the Health Department's program is to free the growing individual from mental and emotional handicaps, to check incipient delinquency and crime, and to foster attitudes, interests, and behavior of value in personal and social life.

The procedure is comparable to that of other branches of medicine. Diagnosis and treatment are preceded by a thorough study of the individual.

First, a physical examination is made to discover handicaps to be overcome. If a physical condition is found, referral is made to the family physician as no prescriptions or treatment for physical conditions are given at the center.

Second, a psychological examination is given to estimate intelligence and to discover special aptitude and disabilities.

Third, a study of the social background is made to gain insight into the relationships and attitudes of the child. The psychiatric social worker talks with parents, teachers, and others capable of giving significant information.

Fourth, the psychiatrist obtains the child's own story about his difficulty, attitudes, and feelings toward others playing a part in his life.

Finally, all those who have contributed to the study of the case come together to pool and interpret findings and to formulate a plan of treatment to meet the educational, emotional, or social needs of the child.

The problems presented by child referred to the guidance centers may be roughly divided into three categories:

First, personality and habit problems, examples of which are overactivity, fears, cruelty, destructiveness, excessive shyness and nervous mannerisms.

Second, conduct problems as stealing, lying, truancy, and sex misconduct.

Third, scholastic problems as listlessness, inattention, destructiveness, reading disabilities, and poor teacher-child relationship.

An important aspect of the program is acquainting those interested in the welfare of children with the principles of mental hygiene through conferences, lectures, and publications. In this connection may be mentioned the centers established at Alabama College and Alabama Polytechnic Institute in collaboration with the sociology and psychology departments and educational departments. Centers are also located at Montgomery and Anniston. For additional information apply to the Division of Mental Hygiene, State Health Department, Montgomery, Alabama.

A. M. G.

BUREAU OF SANITATION

D. S. Abell, M. D. in S. E., Director

FLY CONTROL AT DAIRIES

Contributed By

F. H. Downs, Jr., B. S.
Senior Sanitarian

Every sanitarian recognizes the important part that flies play in the spread of typhoid and other intestinal diseases. The practical elimination of flies is an unsolved problem of modern sanitation, and often a neglected

one. The control of the fly population is generally approached unintelligently with no apparent decrease in the number of flies, and, in many instances, the control measures are so haphazard and ineffective that an increase in the number of flies is noted.

Flies are known to be capable of transmitting infection to milk or milk utensils. Since milk is such an excellent medium for the growth of bacteria, the importance of effective fly control measures at dairies can not be overemphasized. However, fly control at dairies includes measures that affect not only the disease transmitting flies, but also those that are more commonly of a pest nature to the cows and to the dairy help. The former type is the common house fly, *Musca domestica*, while the latter type includes the stable fly, *Stomoxys calcitrans*, and the horn fly, *Haematobia irritans*. The stable fly closely resembles the house fly in appearance while the horn fly is much smaller than either the house or stable fly. We are concerned principally with the control of house flies because they carry disease organisms on their feet, wings, and bodies and may contaminate milk by contact with or immersion in it, or by depositing excreta, commonly known as fly specks, on milk utensils or equipment. We must not minimize the importance of controlling horn and stable flies since both breed in manure as do house flies, and both are blood suckers which annoy and contribute to the discomfort of the cows and thus reduce milk production.

Any program to eradicate flies from dairies should begin with the elimination of breeding places. The premises should be cleared of droppings and piles of manure and other refuse, such as spoiled silage, and accumulations of wet and decaying hay and straw. The U. S. Public Health Service Milk Code lists the following means of manure disposal as satisfactory:

1. Spread upon the fields; or
2. Stored for not more than 4 days in a pile (inaccessible to cows) on the ground surface and then spread upon the field; or
3. Stored for not more than 7 days in an impervious floored bin or upon an impervious curbed platform, and then spread or stored in a tight, screened, and trapped manure shed; or
4. Fly breeding is minimized by methods equivalent to the recommendations of the

U. S. Department of Agriculture, Bureau of Dairying, Milk Inspector Letter No. 104, May 1926.

Experience has shown that manure pits are practically never satisfactory. An effective method used by many Alabama dairymen consists of placing the manure from the dairy barn and the manure droppings from the cow yard in a tight-bottomed float or wagon and transporting same when full by a mule team or tractor to the field for spreading. The cleaning of ditches and drainage areas adjacent to the dairy premises of decaying organic material, such as washings from the barn and milk room, and the storage of solid wastes from the milk house in covered metal containers should also be done routinely to prevent fly breeding therein.

Even with the utmost care flies cannot be entirely prevented from breeding, and it is necessary to destroy those which do appear from undetected breeding places and the premises of neighbors. In addition, many flies are brought to the dairy in the delivery vehicle when it returns with a load of dirty milk bottles. The most effective control of stable and horn flies which are blood-sucking and are not readily attracted to and rarely eat any food bait consists of the use in the dairy barn of killing or repellent sprays. The house flies feed almost exclusively on organic material, either fresh or decomposed, and are therefore easy prey of a baited trap or of a fly poison. The common cylindrical fly trap baited with molasses, bananas, etc., is effective. However, an economical and effective electric fly trap is coming into wide use. Its efficiency as a fly killing device is resulting in its rapid acceptance. Of the fly poisons commonly used, one that has proven satisfactory in a number of Alabama dairies is made according to the following formula:

Sodium arsenite	1 pound
Brown sugar	4 pounds
Vinegar	1 quart
Water, to bring volume to	10 gallons

The sodium arsenite and sugar are dissolved in the vinegar and a small amount of water. This is then brought up to the required volume by the addition of water. An old milk can having a lid makes a good receptacle for storing this poison. Small, shallow receptacles such as saucers, syrup can lids, etc., may be filled with this poison and

placed within easy access of flies, and out of reach of animals, such as on window sills, rafters, tie bars, etc.; or sacks may be wet with the poison and hung from the rafters or suspended from the ceiling. Fly poisons should be limited in their application to the dairy barn, night or resting barns, and adjacent dairy premises, and should not be used in the milk house.

The required and recognized basis for fly control in the milk house consists of the effective screening of all outside openings including outward-opening self-closing doors. Supplementary control methods consist of the use of sprays, openings equipped with electric fly screens or high speed fans, and fly paper. Sprays should be used after the bottle and utensil washing operations are completed but before the milk handling operations are begun. At the time of spraying, all outer openings should be tightly closed and all equipment should be protected by storing in the steam sterilizer, inverting on a storage rack, or covering with a clean cloth. Care should be taken to see that tubes of bottle caps, parchment paper, filter disc, etc., are placed in the storage cabinet before spraying.

Sanitarians should always keep foremost in their minds that the most effective means of fly control is the elimination of breeding places. All other measures are supplementary, and any or all of them should be used when needed to further control or reduce the number of flies.

Woman's Auxiliary

Mrs. F. C. Smith, Chairman
Press and Publicity Committee

September is the month when, with vacations over, we begin thinking of club and organization work.

October is the month when the Auxiliaries will begin their activities for the year. Now is the time for those counties where there is no Auxiliary to begin to organize. If it is not possible to form an Auxiliary, then to those doctors' wives who would like to be members of an Auxiliary in another county or a member-at-large Article I of the by-laws on membership should be of interest. It reads as follows:

Section 1. The membership of this Auxiliary shall consist of all members of component Auxiliaries in good standing and of members-at-large.

Section 2. Any woman, eligible to membership, who, for geographical reasons, finds it more convenient to join an Auxiliary outside the county in which she lives may do so provided she has gained the consent of the presidents of the Auxiliaries concerned. Required dues of the Auxiliary which she joins shall accompany any application for membership. If accepted she becomes a member-at-large.

Section 3. Any woman eligible to membership living in a county in which there is no Auxiliary and wishing to join may make application accompanied by required dues, to the county Auxiliary which is most convenient for her. If accepted she becomes a member-at-large.

Section 4. Any woman eligible to membership living in a county in which there is no Auxiliary or finds no Auxiliary outside her county convenient and wishing to join may make application accompanied by dues of \$1.00 to the State Executive Board. If accepted she becomes a member-at-large of the State Auxiliary.

Section 5. Members-at-large shall have all the privileges of the Auxiliary except that of holding office and voting.

Section 6. No one may be a member of two (2) Auxiliaries at the same time.

Doctors' wives wishing to become members-at-large of the State Auxiliary should send their dues of \$1.00 to Mrs. O. R. Grimes, 601 Turrentine Ave., Gadsden, Ala.

* * *

In her inaugural address, which is in the Post-Convention Bulletin, Mrs. R. E. Mosiman, President of the Woman's Auxiliary to the American Medical Association, says:

"As an auxiliary organization of the American Medical Association, the Woman's Auxiliary should assume its share of responsibility for safeguarding the ideals of American medicine at all times and under all conditions. To this end careful examination should be made of all plans and policies of our various departments for the purpose of coordinating effort and strengthening such means as lie within our powers for the promotion of activities along these lines. . . As someone has recently said, the time has come when poorly informed wives of doctors may do actual harm to the welfare of scientific medicine."

* * *

The Woman's Auxiliary to the Calhoun County Medical Society entertained the doctors in July with a barbecue. This is an annual event and was held at the club house of the Business and Professional Women with Mrs. Gerald Woodruff, Mrs. A. E. Culberson, Mrs. Wade H. Brannon and Mrs. N. T. Davie in charge.

Among those attending were Dr. Woodruff, Dr. Culberson, Dr. Davie, Dr. and Mrs. Hal Cleveland, Dr. and Mrs. B. F. Caffey, Dr. and Mrs. James Meigs, Dr. and Mrs. Knox Spearman and the latter's mother, Mrs. Billingsley of Jasper, Dr. and Mrs. W. M. Salter, Dr. and Mrs. J. M. Kimmey, Dr. and Mrs. Neal Sellers, Dr. and Mrs. Hugh Gray, Dr. and Mrs. James W. Britton, Col. D. R. L. Dunbar, Major and Mrs. A. A. Sparkman, Lieut. and Mrs. Thomas A. Sappington, Lieut. and Mrs. Snapp, Dr. and Mrs. James Williams of Jacksonville, and Dr. and Mrs. Whiteside of Ohatchee.

Read the *BULLETIN*!!

Book Abstracts and Reviews

Magic In A Bottle. By Milton Silverman, Ph. D. Cloth. Price, \$2.50. Pp. 332. New York: The Macmillan Company, 1941.

Magic in a bottle magically told—the story of morphine and of opium, of heroin, quinine, digitalis, nitroglycerine, cocaine, ether, chloroform, and a host more of the older drugs; of the hormones and the vitamins, and of the newer drugs of the sulfonamide group interestingly related. Indeed this reviewer's one criticism of the book is that he found it so fascinating he experienced difficulty in laying it aside once he had begun to read it.

And "some day," concludes the author, "there will be more chapters to this story of drugs. Scientists have invested six thousand years in their search for good drugs, but men still sicken and die needlessly. The scientists certainly won't stop now.

"Even today these stories of the future are being lived. Somewhere is an old physician weary from years of ministering to his patients, who has found a strange clue. 'It is odd,' he writes to a university scientist, 'that an old pet medicine of mine should cure so many patients.'

"Somewhere is a man with an idea that sounds crazy to everyone else, but 'there ought to be something that will stop tumor cells.'

"Somewhere some young fellow is pleading into a laboratory telephone, 'I know, darling, and I'm sorry about dinner. But I want to start one more batch of mice. I think I've got something.'

"Somewhere tomorrow's triumphs are in the making, as fantastic as a fairy tale or as simple as ABC. Some day they, too, will be magic in a bottle."

In anticipation of that tomorrow, when death will be more remote, today's magic in a bottle might well be read by all who would like to know what science has conceived and in travail brought forth in just a tiny segment of her limitless field of operation.

D. L. C.

Love: Understanding and Solving Its Problems. By Samuel Kahn, M. D. Cloth. Price, \$1.00. Pp. 153. New York: Fortuny's Publishers, Inc., 1941.

An extremely simple little book, written for those who have had no technical training and who have read nothing else on the subject, this volume will appeal to the masses of people who get their ideas about love from such magazines as *True Story* and *True Romance*. It does not deal primarily with the problems of sex adjustment as do the books by Malchow, Van der Veldt and Dickinson, but stresses the various attitudes toward love and the practical problems of how to get along with your husband or wife, what to do about the in-laws, how to treat an errant husband. The author encourages the reader, by means of questions, to analyze his own attitudes and gives him an opportunity to evaluate himself.

The average person of high school intellectual level would find this book revealing. Others might find in its pages some good common sense advice. Physicians will find it very primary in scope.

M. C. P.

Infantile Paralysis. By Philip Lewin, M. D., F. A. C. S., Associate Professor of Bone and Joint Surgery, Northwestern University Medical School, Professor of Orthopedic Surgery, Cook County Graduate School of Medicine; Attending Orthopedic Surgeon, Cook County and Michael Reese Hospitals; Consulting Orthopedic Surgeon, Municipal Contagious Disease Hospital, Chicago. Illustrated by Harold Laufman, M. D. Cloth. Price, \$6.00. Pp. 372 with 165 illustrations. Philadelphia and London: W. B. Saunders Company, 1941.

This book is particularly timely to the South in that Alabama and certain other southern states are experiencing an increased incidence of this disease this year. Written by an orthopedic surgeon, much of the book is devoted to the orthopedic side of treatment, including a description of various operative procedures. In addition, however, the present knowledge of etiology, epidemiology and pathology are excellently covered. How to establish a diagnosis and what to do during the acute, convalescent and chronic stages are described in detail. What splints to use and the best position for each part involved are described and illustrated.

The book is well written and well illustrated. It is particularly valuable to the orthopedic surgeon but the general description of the disease and its handling should be of interest to anyone called on to treat infantile paralysis.

D. G. G.

Annual Reprint of The Reports of The Council on Pharmacy and Chemistry of The American Medical Association for 1940. Cloth. Price, \$1.00. Pp. 181. Chicago: American Medical Association, 1941.

This volume contains not only all of the published reports of the Council for the preceding year but also reports on products which were not deemed important enough to be published in *The Journal of the American Medical Association*. Council reports may be classified in general as those of omission or rejection, preliminary reports and status reports on drugs or on various therapeutic and pharmacologic problems. Rep-

resentatives of all classes appear in this volume.

There are a number of interesting reports in the "non-acceptable" category. The one on the widely exploited Neurosine of the Dios Company sounds a timely warning on the hazards of bromidism and uncontrolled hypnotic medication. The report rejecting a number of preparations of gonadotropic hormone from the serum of pregnant mares, together with the report rejecting certain ovarian and ovarian anterior pituitary preparations, attest the Council's continued critical interest in the field of endocrinology. This is also indicated in the report on Desoxycorticosterone, written by Doctor Edgar S. Gordon and adopted by the Council for publication with a statement of the Council's attitude on the present status of adrenal cortex. The Council finds adrenal cortex therapy now in an unsatisfactory and unsettled state.

Two reports relegate to the therapeutic scrap heap the drugs Isacen and Melubrin: Isacen was accepted in 1926 as a non-toxic laxative or purgative; Melubrin is an antipyretic which seemed to have promise when it was accepted in 1913 but which the manufacturer has now ceased marketing. It is interesting to note that at the time these preparations were accepted the Council expressed some misgiving which later proved justified.

Noteworthy preliminary reports are on Guanidine Hydrochloride-Calco, which has been proposed for use in the treatment of myasthenia gravis, and Acetylglycarsenobenzene, a new anti-syphilitic for intramuscular use, which the Council feels should be further perfected. In its report the Council comments with approval upon the manner in which the Winthrop Chemical Company has developed the latter and studied it before even considering its commercial production.

Among the nomenclature reports are those designating "Pyridoxine" and "Pyridoxine Hydrochloride" for Vitamin B₆ and Vitamin B₆ Hydrochloride; "Sulfathiazole" for 2-Sulfanilamidothiazole and "Sulfamethylthiazole" for 2-Sulfanilamido-4-Methylthiazole. Preliminary reports on these drugs as well as on Phenothiazine and Histaminase are included.

It is difficult to choose any among the so-called status reports for special mention—all are noteworthy for one reason or another. The report on the present status of the injection treatment of hernia is a continuation of the Council's consideration of this question. The Council has reached the decision that it is necessary to condemn the exploitation of the injection treatment of hernia by manufacturers of solutions.

Another status report that must be mentioned is that on Lipocaic, a new pancreatic hormone concerned in some way with the normal transport and utilization of fat. The Council awaits development of further clinical evidence for Lipocaic and expressed the opinion that the method should not be recognized for routine practice.

Mention must be made of the excellent report on organic mercurial compounds as bactericidal agents, which states the Council's conclusion that no organic mercurial compound has yet been of-

ferred that will guarantee the destruction of spores under all conditions.

Another valuable report is that on the promiscuous use of the barbiturates. This is a continuation of a previous study of the use of barbiturates in suicide. The present study is an analysis of hospital data.

One cannot even glance through a volume such as this without reflection on the great value of the Council on Pharmacy and Chemistry's work, which so richly deserves the support of all who are interested either directly or indirectly in the progress of medicine.

A. M. A.

New and Nonofficial Remedies, 1941, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1941. Cloth. Price, postpaid, \$1.50. Pp. 691. Chicago: American Medical Association, 1941.

New and Nonofficial Remedies is the book in which are described the medicinal preparations found by the Council on Pharmacy and Chemistry to be acceptable for the use of physicians. The book is cumulative; each year there are added the descriptions of products accepted during the foregoing year. Those taken off the market or found no longer worthy of continued acceptance are deleted. The book is at that time also revised to bring it up to date with the most recent medical thought. Until recent years the additions and deletions have about balanced. Recently, however, the bulk of the book has been increasing and this year's volume represents the largest book of the more than thirty volumes that have been issued.

This year's new additions include the new sulfanilamide derivative, sulfathiazole, as well as sulfapyridine sodium; antipneumococcic rabbit serum of types I, II, III, V, VII and VIII; human convalescent measles serum and human convalescent scarlet fever serum; and staphylococcus antitoxin. The field of endocrinology is represented by the addition of chorionic gonadotropin (follutein). The addition of shark liver oil reflects the search for new sources of vitamins A and D caused by the cutting off of foreign cod liver oil. Other newly accepted preparations are ampules of camphor, digilanid and magnesium trisilicate.

The most extensive revision is represented by the rearrangement and amplification of the chapter, Serums and Vaccines. This chapter is now prefaced by a helpful index, an innovation in N. N. R. The chapter, Vitamins and Vitamin Preparations for Therapeutic and Prophylactic Use has been revised to keep it abreast of the newer developments in this field. Here, too, we find something of an innovation in the systematic use of graphic chemical formulas. It is understood that this practice will be extended to other parts of the book in future editions. Careful perusal will reveal minor revisions in many parts of the book made in the interest of greater clarity and in the effort to keep the book thoroughly up to date.

A. M. A.

X-Ray Therapy of Chronic Arthritis (Including the X-Ray Diagnosis of the Disease). Preliminary report based on 100 patients treated at Quincy, Illinois. By Karl Goldhamer, M. D., Associate Roentgenologist, St. Mary's Hospital and Quincy X-Ray and Radium Laboratories; Former Roentgenologist, University of Vienna; Honorary Member, Mississippi Valley Medical Society, etc., with a Foreword by Harold Swanberg, B. S., M. D., F. A. C. P., Editor, Mississippi Valley Medical Journal and the Radiologic Review; Roentgenologist, St. Mary's Hospital and Blessing Hospital; Director, Quincy X-Ray and Radium Laboratories; Past-President, Illinois Radiological Society, etc. Cloth. Price, \$2.00. Pp. 130, with 24 original illustrations by the author, 2 roentgenograms and 4 tables. Quincy, Ill.: Radiologic Review Publishing Co., 1941.

This book represents a preliminary report based on 100 cases of chronic arthritis treated by the author in this country, although his experience covers a period of about twenty years. The subject is treated from the x-ray diagnostic viewpoint as well as the therapeutic aspect with brevity and clarity.

Doctor Goldhamer is fair in his conclusions that not 100 per cent curative value can be expected. If pain alone is relieved, he considers that improvement has been gained, especially in the advanced case. Those types of arthritis which proved most favorable to x-ray therapy are listed as follows: gonorrheal arthritis, acromio-clavicular arthritis, peri-arthritis calcarea, uric arthritis, hypertrophic arthritis and spondylitis, atrophic arthritis and spondylitis with muscular spondylitis, typhoid and syphilitic arthritis, hemophilic arthritis and tuberculous arthritis. (Some of these types however were not included in the author's material.) The author points out that if all physicians would associate x-ray therapy with chronic arthritis more information would be available. As the situation exists now, the contributors to the literature are not universal in acclaiming x-ray therapy in chronic arthritis.

The multiple joint arthritic who is deformed and who suffers persistent and prolonged pain raises the question of hospitalization, transportation, finance, and exposure of many parts of the x-ray. Of course, no assurance of success can be given the patient to compensate for the overcoming of such obstacles as mentioned. All of these factors are encountered by most of us in considering this type of therapy.

Because of the dreadful morbidity statistics in arthritis, any addition to our armamentarium must be graciously acknowledged and studiously investigated. Doctor Goldhamer's monograph is concise and easily read. It is recommended to all who are interested in this great problem.

E. N. K.

Marriage and Divorce Records—Marriage and divorce, and the problems of collecting the records of their occurrence, may seem rather outside of the interests of public health. But public health must be concerned with marriage, both as an event which marks the beginning of a new family and as the designation of a pattern of living.

Public health is directly interested in all the circumstances which affect the well-being of an individual throughout his life. His physical and mental health, his personal and social adjustments, his adequate functioning as a citizen and parent are all involved in his well-being.—Cohen, *Am. J. Pub. Health*, Aug. '41.

Current Comment

TRUTH ABOUT ALLEGED VACCINE FOR TUBERCULOSIS IS REVEALED

A. M. A. JOURNAL PRESENTS FACTS SURROUNDING THE "DISCOVERY" WHICH HAS CAUSED RIOTS OF PATIENTS IN ARGENTINE AND ECUADOR

"Recently newspapers and magazines have featured pictures of riots in the Argentine and in Ecuador among patients suffering with tuberculosis who, it seems, were demanding of the government the right to be inoculated with a new vaccine supposed to be useful in the treatment of this disease," The Journal of the American Medical Association for September 6 says. "The vaccine was apparently developed by one Jesus Pueyo, who was a laboratory bacteriologic assistant in the Medical School of Buenos Aires. The first announcement of his alleged discovery appeared in the newspapers of that city. Incidentally, he had previously announced a similar vaccine for leprosy. Because of the method of presentation of this discovery, scientific physicians were inclined to discount it completely; indeed the medical authorities simply refused to make tests of the product. Later the minister in charge of these matters in the Argentine invited Mr. Pueyo to demonstrate his preparation in the state laboratories.

"The results of this scientific attempt were wholly negative, and the minister forbade the use of the vaccine in the Argentine. In Uruguay it is reported that the minister of health is about to promulgate a similar resolution, and in Chile the director of public health has ordered that a study of this product be made, limited exclusively to animals.

"Because of the activities of the discoverer in the Argentine, according to a report published in La Nacion of Buenos Aires, the National Department of Hygiene has imposed a fine on the investigator. It was proved that he had distributed the vaccine without any permit from the government Office of Hygiene. He was therefore assessed a fine of 1,000 pesos."

THE HAZARDS INVOLVED IN TREATMENT WITH SULFANILAMIDE

The hazards involved in treatment with sulfanilamide and its various related compounds are again emphasized in The Jour-

nal of the American Medical Association in a report in its September 6 issue by Max S. Wien, M. D., and Eugene P. Lieberthal, M. D., Chicago, of the case of a patient who died following a generalized skin eruption that resulted from treatment with sulfanilamide.

"The increasing use of sulfanilamide, sulfapyridine and related compounds by physicians and their description in the lay press with subsequent indiscriminate, uncontrolled use by the public," the two Chicago physicians say, "emphasize the important need for the medical profession to be on the lookout for toxic (poisonous) manifestations occurring as a result of the use of these preparations by both the physician and the public."

The reaction in their patient resembled pemphigus foliaceus, a disease characterized by the formation of large, flaccid, scabby blisters filled with a watery fluid, which, after drying up, leave pigmented spots on the skin. The two men explain that the sulfanilamide treatment was inaugurated for an inflammatory condition of the mastoid. The patient died several months later.

The authors explain that "While it is intended that the public be impressed with the fear of toxic reactions in order to avoid the baneful sequelae which might result from the indiscriminate use of the sulfonamides, on the other hand a thorough knowledge of what reactions to expect and the recognition of them will help dispel the fear of toxic effects on the part of the physician, thus giving him a feeling of greater security in the use of these valuable new chemotherapeutic (treatment with drugs) agents. . . "

They particularly emphasize the fact that the case reported emphasizes that there is a similarity between certain elements in the group of symptoms associated with pemphigus and those occurring as a sequela to the administration of sulfanilamide for treatment purposes.

FEW TRADES CLOSED TO HARD OF HEARING

"With the exception of a few special trades, . . . there is no kind of work which the person who is hard of hearing cannot do and do well if he approximates his psychologic attitude to the normal; if he compensates for his defects with lip reading and

hearing aids; if he makes himself just a little bit more efficient than his fellows, and if he is sober, industrious and honest," William E. Grove, M. D., Milwaukee, maintains in the October issue of *Hygeia*, *The Health Magazine*, in considering the problems in industry of the person whose hearing is impaired.

Among the specific occupations in which defective hearing in the employee is regarded as a genuine handicap by the employer Dr. Grove includes those of telephone operators, stenographers, clerks in stores where salesmanship necessitates much conversation, jobs in the heavy industries where there is heavy moving machinery, such as cranes, trucks and conveyers, and where orders and directions are given by bells, whistles or verbally. "It, therefore, is best," he says, "for him (the person with defective hearing) not to seek work in these particular occupations, or if already engaged in them, as his defect increases, to train and perfect himself in some other line of work, preferably in a type of work somewhat allied to his former job.

"Employers," the physician continues, "generally believe that the person who is hard of hearing does good work in jobs in which he can do a piece of standardized work by himself and when he is not obliged to work in a group. . . . If the person with defective hearing finds himself in an occupation in which his loss of hearing is a distinct handicap, he must strive to perfect himself in some allied branch of work in which good hearing is not so essential. There are many organizations to which he can apply for such reeducation and rehabilitation. He must use every effort to perfect himself in lip reading and much can be accomplished in this regard without special training. Such special training is usually available to him. If his hearing defect becomes so marked that he cannot hear the spoken voice at three or four feet, he must overcome his aversion and reluctance to wearing a hearing aid."

STUDY SHOWS NEW MATERIAL REDUCES FOOT INFECTION RISKS

CEMENT FLOOR SURFACING SUBSTANCE IS FOUND
TO EXERT POWERFUL ACTION ON BACTERIA
IN WATER FILM ON GYMNASIUM FLOORS

By supplementing properly maintained footbaths in gymnasiums with a recently introduced cement floor surfacing material on

the floors of swimming pool runways, locker rooms and shower rooms, the danger of contracting floor-transmitted infections of the feet can be reduced to a minimum, W. L. Mallman, Ph.D., East Lansing, Mich., reports in *The Journal of the American Medical Association* for September 6.

The new surfacing material contains cupric oxychloride and is called "hubbel-lite." It is claimed that this flooring when wet releases a minute amount of a copper compound which exerts a powerful action on bacteria in the water film on the floor surface. Dr. Mallman's report presents the results of a study relating to the possibilities as well as the limitations of such a floor covering as an aid in reducing the hazards of floor-borne infections.

"Epidermophytosis (infection of the skin by a certain type of fungi) and plantar warts (on the soles of the feet)," the author says, "are diseases that are transmitted primarily through the contact of bare feet and contaminated floors. Thus floor sanitation is a problem in locker rooms, shower rooms and runways of swimming pools.

"The commonly accepted procedure of control consists of placing footbaths containing antiseptic solutions in doorways to the swimming pool or shower rooms. By this means the feet are at least momentarily immersed in an antiseptic bath which undoubtedly removes organisms from the feet and also destroys many of them. When the footbath is the sole means of prophylaxis, the bather returns to his locker on contaminated floors and may reinfect his feet before dressing.

"Realizing that reinfection may result from contaminated floors, many establishments as a routine wash all floors carefully and follow this with disinfection. Owing to the frequently continuous use of the locker rooms, showers and swimming pools, the cleaning and disinfection of the floor must be done at the end of the day's use. By this procedure floors become increasingly more contaminated during the day. Cleaning and disinfection function merely as a means of removing each day's increment of pollution; although they may lessen the extent of the contamination, they do not entirely eliminate the danger of floor transmission. . . ."

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GOITER*

ITS DIAGNOSIS AND TREATMENT

By

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Goiter may be defined as a disease of unknown cause, the most common characteristics of which are disturbed function and enlargement of the thyroid gland.

In 1938, the latest year for which we have full statistics, there were 4,460 deaths in the United States from disease of the thyroid and parathyroid glands. Possibly many more deaths of thyroid origin were signed out under other diagnoses, such as heart, cardiovascular or renal disease. A simple but satisfactory classification of goiter consists of four types; namely, nontoxic symmetrical, nontoxic nodular, toxic symmetrical and toxic nodular. At times there may be seen what one might term a mixed type, in which the gland is nodular and also contains areas of hyperplasia characteristic of the symmetrical type.

Various clinical varieties may be seen under the first, or nontoxic symmetrical type goiter. Some of the varieties which may be encountered are congenital goiter, goiter of childhood, adolescent goiter, and goiter of pregnancy. The majority of these are inactive but occasionally there may be some question of toxicity. Though no clinical evidence of activity may be detected a lowered liver function may be shown to exist.

Vascular and parenchymatous goiters are probably the two most frequent varieties of congenital goiter. The colloid type is less frequent. Cystic goiter, when it does occur, may attain large size. The congenital variety is apt to occur in endemic regions, and is

frequently associated with goiter in the parents, usually the mother. Histologically, it is practically the same as in adults, except vascularization may be more developed. Congenital goiter may or may not produce symptoms, and it may subside with or without treatment. In other cases it may grow and attain large size. Prophylaxis is, of course, good treatment. Goitrous women should be treated prophylactically during pregnancy. When the congenital type does occur, expectant plus suitable medical measures are advised, and surgery should be withheld unless and until there are definite indications.

Different from the new born with congenital goiter, whose parentage is usually goitrous, children with goiter do not necessarily come from parents who have the disease; in many instances there is no goiter in the parents.

In children, as in adults, all varieties of goiter are found, the parenchymatous probably being the most frequent. One or more nodules may sometimes be found, indicative in many instances of a fetal adenoma. Diffuse colloid goiter may be found. Basal metabolism in young people with simple goiter is usually normal or slightly below normal. Iodine properly and cautiously used, and thyroid extract in proper dosage when metabolism is low, may bring improvement. Goiter of adolescence generally occurs in young girls at puberty or soon after. There is usually mild hyperplasia and hypertrophy of the thyroid. As a rule the gland is moderately firm. Ordinarily there is no exophthalmos but mild hyperthyroidism may exist. There may be nervousness and irritability, a high strung temperament, mild tachycardia, possibly some palpitation, fatigability, vasomotor instability and slight tremor. Frequently such cases adjust themselves. On the other hand, they may pro-

*Read before the Association in annual session, Mobile, April 15, 1941.

gress and become definitely toxic. In goiter of adolescence and childhood all foci of infection should be sought for and removed. The treatment for goiter of adolescence, like that of childhood, is, as a rule, medical plus proper hygienic conditions.

Goiter may exist during pregnancy. The thyroid frequently enlarges during pregnancy, due, as a rule, to parenchymatous hypertrophy and hyperplasia. For simple goiter of pregnancy treatment is usually medical. In the absence of an adenomatous goiter, iodine may be given in small doses with the idea of supplying the demand of the fetus. In young women, and particularly in those with colloid goiter, iodine cautiously given is probably indicated. Goiters causing mechanical symptoms and thyrotoxic goiters may require surgery.

Under type two we have the nontoxic nodular goiter with possibly no symptoms than those of hypofunction or pressure. This variety is often described as nontoxic adenomatous goiter, which may be fetal or adult. Iodine, as a rule, is not beneficial and, in fact, may even be harmful.

Nontoxic nodular goiter in patients under twenty-five years of age ordinarily requires no treatment unless causing mechanical symptoms or for cosmetic reasons. The diagnosis is generally not difficult unless one is dealing with an intrathoracic goiter, which, if present, might not be readily recognized. In the event symptoms of pressure or toxicity occur, surgery, of course, is then indicated. If the growth has a tendency to become intrathoracic, surgery is to be considered. In patients past twenty-five years of age nodular goiter is potentially malignant and potentially toxic and should be carefully watched and surgery instituted if growth is noted or toxic symptoms appear. It must be remembered that malignancy rarely develops in a normal thyroid and that the majority of thyroid malignancies have their origin in a preexisting goiter. Therefore, any hard nodule in the thyroid is potentially malignant and is certainly better out than in.

In considering the other types of goiter, namely, toxic symmetrical (toxic hyperplastic, either with or without exophthalmos) and the toxic nodular (toxic adenomatous), we are, of course, dealing with hyperthyroidism. The diagnosis in the ma-

jority of instances is not difficult, particularly in young individuals. In older patients with hyperthyroidism associated with other conditions, such as organic heart disease, hypertension or tuberculosis, the diagnosis may at times be difficult.

We know that hypertension and cardiac decompensation may cause a marked increase in metabolism. Neurocirculatory asthenia with tachycardia and thyroid enlargement may resemble hyperthyroidism in some respects. A properly run and checked basal metabolism should be of great help in distinguishing the so-called neurocirculatory asthenia from true hyperthyroidism. If a true hyperthyroidism exists, metabolism, as a rule, will be increased, whereas in the nervous patient without hyperthyroidism repeated basal metabolism tests will usually be found normal or below normal. Blood cholesterol is generally decreased in hyperthyroidism. The hyperthyroid patient nearly always has warm skin, while the patient with neurocirculatory asthenia will usually have cold, moist extremities. It is certainly exceptional, to say the least, for a patient with hyperthyroidism to experience constipation. Some even have diarrhea. Nearly all will have increased appetite and a certain amount of heat intolerance. They frequently lose weight. The majority of the conditions just mentioned are seldom found in the nervous patient without hyperthyroidism. Pulse pressure is usually increased in hyperthyroidism. The iodine test is helpful. In the majority of instances of true hyperthyroidism, after the administration of iodine from several days to two weeks, a lowering of metabolism, a calming of the nervous system and general clinical improvement will be noted. Unfortunately this improvement is in a great majority of instances only temporary but frequently proves a very useful diagnostic point. After all, in arriving at a correct diagnosis, the clinical picture should be carefully studied.

The treatment of hyperthyroidism is in the main surgical. In the early toxic diffuse type goiter, if the symptoms are mild, medical treatment may be tried for a short while. If definite improvement is not noticed after a fair trial, or in the event recurrence takes place, then surgery should be resorted to. In the severer forms surgery is the treatment of choice. The treatment for toxic nodular

goiter is surgical. Preoperative management in all cases of hyperthyroidism is most important, particularly in those complicated with cardiac and other conditions and in the aged. Decompensation if present should be treated with rest, digitalis and proper diet. All cases are treated preoperatively with iodine, sedation and suitable diet, rich in carbohydrates and with sufficient milk. For auricular fibrillation, if present, in addition to digitalis, quinidine is sometimes used. Patients are allowed lavatory privileges and are not confined to bed all day unless decompensation is present. Frequently a barbiturate is given by mouth about two hours and morphine grains $\frac{1}{4}$ and hyoscine grains $\frac{1}{150}$ by hypodermic about one hour before operation. In the aged these drugs are given in much reduced quantities for fear of depressing respiration and the cough reflex, thus predisposing to pneumonia. Each patient is individualized and the length of preoperative treatment is governed chiefly by the clinical picture. Experience is the best guide as to whether a one- or a two-stage operation is to be done. If in doubt it is better to resect one lobe; then wait about six weeks and resect the other. Postoperative care is carried out by continuing iodine for a few days or sometimes a little longer. Morphine or other suitable narcotic is given in sufficient quantities for quietude. Glucose intravenously is given in the majority of cases and fluids by mouth are given as soon as tolerated. In severe cases, iodine in the form of Lugol's solution, fifty drops to 1000 cc. of ten per cent glucose in normal saline solution, is given intravenously. An ice cooled oxygen tent is a most useful adjunct as a preventive and in the treatment of complications following operation. Proper nursing is essential in the care of the hyperthyroid patient. It is very important that nurses caring for these patients should have special training so that they will be alert and able to recognize the signs and symptoms of an impending crisis and be familiar with and able to carry out the nursing procedures required and so necessary in the very sick patients.

It is the long standing cases of hyperthyroidism, where cardiac, liver, and other damage has been done, that are most apt to result in crisis and possible fatality.

Early diagnosis and early adequate treatment are essential if serious and permanent sequelae, morbidity and even mortality are to be prevented.

SUMMARY

1. Goiter is defined.
2. Statistics of the deaths in the United States from disease of the thyroid and parathyroid glands in the year 1938 are mentioned.
3. The chief types of goiter are outlined.
4. Some of the varieties of nontoxic symmetrical goiter are mentioned and their diagnosis and treatment discussed.
5. Nontoxic nodular goiter is mentioned; its diagnosis and treatment discussed.
6. Toxic symmetrical (toxic hyperplastic, either with or without exophthalmos) and toxic nodular (toxic adenomatous) are discussed, dealing with diagnosis, pre- and post-operative care.
7. The importance of entrusting nursing care to those experienced in thyroid cases is mentioned.
8. Importance of early diagnosis and early, adequate treatment is stressed.

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Head Trauma—It has long been customary, in cases of head injury, to utilize the erythrocyte count of the spinal fluid as one of the guides for prognosis and for estimating the site and degree of the trauma. Our clinical observations of certain post-traumatic brains, seen at the autopsy table, together with the antemortem clinical and laboratory findings in such patients have, in many instances, not been in accord with these opinions, as a lack of correlation is occasionally demonstrated between antemortem cerebrospinal findings and the actual injury as seen at autopsy.—*Meredith, South. M. J., Oct. '41.*

CONGESTIVE HEART FAILURE*

By

WILLIAM HARBIN, JR., M. D.

Rome, Georgia

There are several reasons why I want to discuss this common condition with which all of you are familiar. In the first place my experience has been that practicing physicians do not always have a clear conception of the mechanism of heart failure. Secondly, the condition may not be correctly diagnosed in its early stage; and, lastly, physicians are not always aware of the good results that may be obtained by proper treatment. With these reasons in mind I shall say something about the differential diagnosis of heart failure, its mechanism and treatment.

Congestive failure may be defined as that condition of the heart in which it is unable to maintain an efficient circulation during rest or moderate exercise. At this time we are not interested in the cause of failure, whether it be a valvular defect, hypertension or myocardial infarction, but shall confine our attention to the state of the heart muscle and how efficiently it can work. It is important to recognize the onset of failure, regardless of the cause, and to treat it correctly. Although there are many causes of heart disease, rheumatic fever for instance, for which we are able to do very little if anything, after congestive failure develops the treatment of this condition is very gratifying even though it be the terminal stage of heart disease. Patients should by all means have the advantage of what can be done since they may live longer in reasonable comfort. While caring for a patient with heart disease a physician may be so occupied with the underlying cause, about which he can do very little, that he may not recognize and treat failure promptly as it develops.

Much progress has been made during this century with regard to a better understanding of cardiac disease but it has only been in recent years that important knowledge has been gained about contractive disturbances, toward which our attention is focused at this time. In view of this recent knowledge a better conception of heart failure is possible.

*Read before the Etowah County Medical Society, Gadsden, June 17, 1941.

Peripheral circulatory failure, sometimes called shock or collapse, is incorrectly diagnosed as being heart failure probably more than any other one condition. It is found with infections, such as pneumonia and puerperal sepsis, and other miscellaneous conditions, as, for example, diabetic coma, and following hemorrhage, surgical operations and severe trauma. Patients who die under these circumstances expire at the time the heart stops beating but death is not due to heart failure primarily. In this condition there is a decrease in the circulating blood volume with an inadequate return of blood from the periphery to the heart, due to stagnation in the capillary bed and small veins. These patients are usually cyanosed, have a rapid pulse, a decreased venous pressure, a lowered blood pressure and an anxious facial expression. Certainly when they are first seen, unless this condition is understood, they may be given digitalis and treated as if they had congestive failure. Such treatment is not warranted and probably harmful. Much discussion as to the advisability of using digitalis in the routine treatment of pneumonia has been going on for many years. The evidence which is available at this time should end this controversy since digitalis has proven to be useless in peripheral failure and should be used in pneumonia only if congestive failure is present or anticipated.

The same is true in attempting to combat shock associated with the other conditions mentioned as it is not possible to slow the heart rate or improve the circulation with digitalis. An increase in the blood volume by the intravenous injection of fluids will improve the peripheral failure more than any one therapeutic agent. Injections of caffeine or coramine may be of value at times but their effects are not striking. Certainly an effective drug is needed in the treatment of peripheral circulatory failure.

There are a number of other conditions which may be confused with heart failure, chiefly asthma, bronchitis, low grade pneumonic infections, nephritis with edema and cirrhosis of the liver with ascites. Differentiating these conditions is usually possible by the use of common clinical and laboratory measures but occasionally the problem is difficult. When such is the case it is well for practitioners to know that there are two

simple tests which are helpful in the diagnosis of congestive failure. These clinical tests are, first, a rough determination of the venous pressure and, second, a measure of the velocity of the flow of blood from the arm to the tongue. It is always wise to make a clear distinction between heart disease and heart failure. The former may be present for many years with the heart well compensated and doing its work efficiently. It is obvious that during this time treatment directed toward failure is not only useless but may do harm.

To understand congestive failure it is necessary to know something about the mechanism which produces it. The general belief now is that it is due to back pressure, referred to as backward failure, rather than to an insufficient output of blood to the tissues, which is called forward failure. At this time there will be no discussion of these two theories. It will be sufficient to say that practically all of the recent information obtained about the nature of failure indicates that it is due to back pressure.

Failure of the right or left ventricle should be distinguished even though both chambers are usually involved. To illustrate left ventricular failure let us follow the chain of events in a patient with long standing hypertension. To expel blood under increased pressure the left ventricle dilates and hypertrophies to improve its contracting power. In time the pressure in the left auricle increases. This is followed by increased pressure in the pulmonary circulation, producing congestion. Later, pulmonary edema develops and finally hydrothorax. Symptomatically, shortness of breath with exertion appears first. Occasionally the dyspnea will begin at rest, particularly at night. Shortly thereafter the respiratory distress becomes severe.

An increase in pressure in the right side of the heart with failure usually follows these changes in the pulmonary circulation. The reason failure of the right ventricle usually follows failure of the left ventricle is because the majority of the underlying causes of cardiac disease are of such a nature as to impose an initial strain on the left ventricle. These conditions are hypertension, disease of the coronary vessels of the left ventricle, and valvular lesions in the left side of the heart. Occasionally the primary

process may affect the right side of the heart, in the presence of chronic pulmonary disease, congenital deformities, tricuspid disease or adhesive pericarditis. Failure of the right side of the heart produces systemic congestion with the following signs: venous distention with increased venous pressure, peripheral edema, enlargement of the liver, ascites, albuminuria and cyanosis. From a clinical viewpoint, as a rule, one will first find failure of the left ventricle with the pulmonary phenomena which have been mentioned; or, more frequently, combined right and left failure with systemic signs and symptoms in addition to those affecting the pulmonary circulation.

In the absence of symptoms indicating the presence of failure, there are two physical signs which indicate that it is present or impending, a gallop rhythm and pulsus alternans. When present they may be of considerable significance.

Before the onset of failure the majority of people with cardiac disease pass through several stages and these will be mentioned briefly. Potential cardiac disease refers to patients who have no signs or symptoms of a cardiac disorder but who have a disease which may lead to its development. Individuals who have hypertension or who have had rheumatic fever belong to this group. Asymptomatic cardiac disease includes those patients who have objective signs of heart pathology, such as enlargement or diastolic murmurs, but who are able to live in a normal way without symptoms. The stage just preceding the onset of frank failure is that of diminished cardiac reserve. During this period, which may last for months or years, the patient will have shortness of breath after muscular exertion of a degree which could be performed previously without discomfort. The progress of the underlying cause of failure usually progresses slowly and failure may be precipitated by miscellaneous etiologic factors. These are usually one or a combination of the following: infections, unusual physical exertion, pregnancy, gain in weight, anemia, change in rhythm or prolonged mental strain.

The object in the treatment of heart failure is to prolong life and to increase the comfort and usefulness of the patient. No complete cure, as is obtained in certain other diseases, is to be expected although symptomatic recovery often takes place. It is not

uncommon to see a patient with congestive failure, not too severe, go along for several years leading a moderately active life and being reasonably comfortable. Death, when it does come, may be due to some other cause, often renal failure.

Digitalis has a specific action and is the most important drug used in the treatment of this condition. It is indicated regardless of the cause of the heart failure, whether the blood pressure is high or low, whether the pulse is regular or irregular. It is usually not possible, as some of us have been told, to figure the exact dose of digitalis needed, based upon the weight and age of the patient. The effect of digitalis varies with different individuals and the dose should be governed to a certain extent by two things, the production of the desired effect and the appearance of toxic signs or symptoms. It is, of course, possible to have a general idea as to the amount of this drug which a patient will need. The average adult who has not been taking digitalis will need 20 to 25 grains to be digitalized, when it is planned to give this dose over a period of 3 or 4 days. When a patient is in a serious condition, let us say with acute pulmonary edema, digitalis intramuscularly or intravenously should be given. The emergency should determine the size of such doses, keeping in mind that digitalis given parenterally has almost double the effect of digitalis given by mouth. The prompt administration of this drug intramuscularly or intravenously occasionally saves a life.

Moderately severe cases should rest from 2 to 4 weeks, or, if the failure is slight, a decrease in activity with periods of rest will suffice. The patient should not be compelled to rest in bed as it has been shown recently that in certain cases this is not only unwise but may be harmful. Bed rest may cause a shift of fluid from the lower extremities to the lungs and in this latter location additional fluid increases the patient's distress and is dangerous. Rest in a chair is then preferable. From a practical viewpoint I think it is wise to allow the patient to help the physician to decide what position improves his comfort.

The use of mercurial diuretics, preferably combined with theophylline, is routine if there is as much as a moderate amount of congestion present. If these drugs do not

produce the desired effect when injected intravenously, ammonium chloride should be administered by mouth to improve and prolong their effect. Such diuretics should not be used when acute nephritis is present and should be given with caution if the non-protein nitrogen in the blood is above 50 mg. per 100 cc. No doubt all of you are familiar with the dose of these drugs, the frequency with which injections should be given, and know that they can be used over long periods of time with beneficial effect.

The fluid intake of the patient is important and to begin with should be limited to 1000 or 1200 cc. daily. To illustrate the value of a lowered intake of fluid I will mention a patient who was seen recently. She was a woman of some 70 years who had had congestive failure for 3 or 4 months. One of several things which was noted when she was first examined was that her fluid intake was approximately 2500 cc. daily and urinary output only 100 to 150 cc. daily. With a restriction of her intake to 1000 cc. daily and the use of other measures she improved. Later, even though she was digitalized and receiving mercurial diuretics regularly, on several occasions it was found that if her fluid intake exceeded 1600 cc. daily her congestive failure became more pronounced and her urinary output decreased. Improvement followed when the fluid intake was lowered again. Apparently the ingestion of that additional amount of fluid daily was just enough to overtax her damaged heart.

Excessive purgation should be avoided as it is too wearing upon the patient. In some cases I find an occasional small dose of calomel beneficial. It makes the patient feel better and fewer injections of mercurial diuretics are necessary.

At this time nothing will be said about other important therapeutic measures such as sedatives, the use of oxygen, the withdrawal of fluid from serous cavities and the occasional need for a phlebotomy.

Heart failure due to certain curable conditions will disappear when the cause has been eradicated; such diseases include thyrotoxicosis, myxedema and a deficiency of thiamin chloride. The results in these conditions will be dramatic and, although they are not common, the fact that they are curable increases their importance.

In conclusion it may be said that understanding the nature of congestive heart failure and its proper treatment may add much to the lives of the individuals so afflicted, and, in view of the relative increase in cardiac disease, knowledge about this common condition becomes more important.

THE SURGICAL COMPLICATIONS OF PEPTIC ULCER*

By

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The surgery of peptic ulcer is the surgery of its complications. It is now fully and, I think, rightfully agreed among surgeons and medical men that the treatment of all simple and uncomplicated ulcers should be in the hands of the gastroenterologists. In other words, the cure of gastric and duodenal ulcer is primarily a medical problem. Only when medical treatment becomes inadequate or fails is the surgeon called.

In discussing the complications calling for surgical consideration, the following must be considered:

- (1) Perforation.
- (2) Hemorrhage, severe and recurrent.
- (3) Pyloric obstruction, which does not yield to medical treatment.
- (4) Pain of intractable type, not relieved medically.
- (5) Malignancy—cases in which the question of malignancy cannot be settled.

The surgeon has at his command three types of operation to combat them. They are:

1. Pyloroplasty.
2. Gastroenterostomy.
3. Partial gastrectomy.

Pyloroplasty is the safest of all. It also permits, most of the time, a removal of the ulcer with a portion of the pyloric sphincter preventing further stasis in the stomach. Best of all it directs the discharge of acid stomach contents into that part of the intestine which nature provided and conditioned to receive it.

Gastroenterostomy is next in safety but it is often a compromise operation. It always carries with it the threat of an anastomotic ulcer, particularly if the stomach acid is high. That this is true is generally accepted by surgeons of experience. Various surgeons have reported from two to twenty per cent of jejunal or gastrojejunal ulcers following this procedure. Probably four to six per cent is near the truth. Once gastrojejunal ulcer is formed the patient's condition is far worse than before the operation. The cure of anastomotic ulcer involves the taking down of the gastroenterostomy, resection of the damaged jejunum, or repair of the rent in it, and partial resection of the stomach—all in a field of dense adhesions and edematous tissue; on the whole, a serious and complicated operation.

Partial gastrectomy comes nearest the ideal in curing duodenal ulcer. Following it one sees the lowest acid content in the stomach and the most complete and permanent relief for the patient. However, it is the most difficult of the three and carries with it a greater mortality.

We believe that the type of operation to be done in any given case should not be decided until the abdomen is opened, and the pathologic condition examined under direct vision. In arriving at a decision to perform partial gastrectomy several factors enter.

First of all, the patient must be a good surgical risk, and preferably young. Second, the operation is much more difficult in fat people, in whom the stomach is difficult to deliver from under the left costal margin. Third, if the lesion is in the duodenum, can the ulcer be resected and will there be sufficient stump to turn in and guarantee a leak-proof closure? In our early experience we had two cases which presented leaking duodenal stumps, four and six weeks respectively, after the primary resection. Both were finally cured, one by reopening and suture, the other by continuous suction of the wound.

If, after due consideration, partial gastrectomy is not deemed advisable, we must choose between pyloroplasty and gastroenterostomy. Then, if pyloroplasty is mechanically and satisfactorily possible, it should be the operation of choice. If not, we must be content with the less satisfactory operation

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of gastroenterostomy, regardless of the chance of a later anastomotic ulcer.

Perforation presents a surgical emergency of the first magnitude. In perforation the choice must be made between simple closure of the perforation and some other procedure. It is our belief that the saving of life is of first importance, and often the duty of the surgeon is best accomplished by simple closure. After convalescence the patient should be placed under competent medical treatment. Many will remain permanently well. Again, if the perforation is seen early, a pyloroplasty with excision of the ulcer may be safely undertaken. Gastroenterostomy should be reserved for those cases in which closure of the perforation causes obstruction.

Pyloric obstruction is of two types: (1) that caused by pylorospasm and edema of an active ulcer; and (2) that caused by cicatricial contraction. In the first type the ulcer is active, the stomach acid is high, and the condition will promptly yield to correct medical treatment in most cases. Operations should not be undertaken until medical treatment has had a fair trial. On the other hand, a cicatricial obstruction means that the patient has healed his ulcer and that the gastric acid is low. In this type of case gastroenterostomy gives brilliant results and should be unhesitatingly employed.

Gastric ulcers fall in three groups: (1) those that are frankly benign, (2) those that are frankly malignant, and (3) those where the question of malignancy cannot be settled.

In gastric ulcers showing repeated hemorrhage, resection should be undertaken without delay. The gastric ulcer which refuses to completely heal should be removed for fear of malignancy. Practically all ulcers on the greater curvature are malignant and demand early and extensive resection of the stomach. The operation of choice for gastric ulcer is partial gastrectomy.

The question of bleeding duodenal ulcer is often a difficult problem for the surgeon and a serious one for the patient. It is estimated that 2 per cent of all ulcer cases die from hemorrhage. Of those serious enough to seek treatment in the hospitals, about 5 per cent die from hemorrhage before they can be gotten in shape for surgery.

The ideal management is partial gastrectomy, with removal of the ulcer at the same time. Unfortunately this cannot always be done. Patients with low hemoglobin after massive hemorrhage are often poor risks for any operation, and no surgeon wishes to undertake an extensive and shocking operation in the face of such conditions.

The presence of severe and repeated hemorrhage indicates in itself that the ulcer is extending and not healing. This is brought about by the position and anatomic relations of the ulcer. When the ulcer is on a flexible peritoneal surface, such as the anterior aspect of the duodenum, it puckers, infolds, and heals. On the other hand, a posterior ulcer, having for its bed the pancreas, has no chance to infold and not much to heal. It is further unfortunate that here the ulcer rests on a rich vascular field, the pancreaticoduodenal artery and its branches, ready to be eroded.

The usual treatment of hemorrhage consists of rest in bed, withdrawal of foods and liquids by mouth, and morphia.

The question of transfusion is debatable. At times a transfusion with attendant rise in blood pressure may dislodge the clot from an eroded artery and renew serious bleeding. When the blood of repeated transfusions rapidly disappears from the circulation it is evidence that a good sized vessel has been eroded, and, in a bold operative attack, may lie the patient's only chance. This should be undertaken only by a surgeon experienced in gastric surgery. A patient with bleeding gastric ulcer, although in poor condition, stands a much better chance with gastrectomy than a patient in similarly poor condition with a bleeding duodenal ulcer. This is because the control of the bleeding behind the duodenum, next to the pancreas, may be exceedingly difficult and time-consuming. In desperate cases transfusions will be given anyway. A good rule, in this situation, is to give a transfusion if it is deemed that the patient's condition cannot stand another hemorrhage. However, it is the collective experience of the profession that more lives will be saved, on the whole, by not operating when the patient is bleeding.

Intractable pain is relieved by any procedure which cures the ulcer, and needs no special discussion.

In a series of 162 peptic ulcers upon which the author has operated, 150 were duodenal and 12 were gastric; 27 had bleeding, either seen in the vomitus or in tarry stools. During this time, two patients, seen but not operated upon, bled to death from eroding peptic ulcers.

In severe bleeding ulcer, is gastroenterostomy a justifiable procedure? In many such cases it offers the only chance to a bleeding, anemic patient in poor condition. We recently operated upon a woman of 40 who has been bleeding off and on for ten years. She had spent many weeks at various times in hospitals under medical management of her duodenal ulcer. Last October she began to bleed rather steadily, and, in spite of nine transfusions, in January of this year her condition had become critical. She could not stand a resection. Pyloroplasty with manipulation of the ulcer was considered ill-advised. A gastroenterostomy was performed. She has bled no more. The hemoglobin has risen from 40 per cent to 80 per cent. She has gained 24 pounds and feels well. Thus, an indirect operation was accepted as a compromise and has probably saved her life. At the age of 40, gastric acids begin to decrease in strength and she may indeed remain cured.

As illustrative of the dangers in delaying operation in a case of suspected malignancy, I will mention another case. Last October a man of 36 with a definite gastric ulcer which did not heal completely, as judged by x-ray and the patient's symptoms, refused operation at the insistence of relatives. A few weeks ago he appealed for relief. At the operation a large carcinomatous ulcer was found on the lesser curvature. Extensive resection was performed. One gland attached to the stomach showed carcinomatous infiltration. There were large, soft glands, perhaps inflammatory, about the esophagus which could not be removed. He has gained 15 pounds and feels well. Nevertheless, he is probably doomed to a cancer death.

CONCLUSIONS

1. All ulcers should be treated medically until complications necessitating surgery arise.

2. Selection of type of operation should not be decided until the abdomen is opened, and then the patient's ability to stand the procedure must be thoroughly weighed. In

other words, a compromise operation, like gastroenterostomy, may have to be accepted for the sake of the patient's safety.

3. After-treatment is most important. It should be in the hands of the gastroenterologist. It plays an important part in the permanent welfare of the patient. These patients should be impressed with the fact that they have failed to heal their ulcers. Understanding this they may become more cooperative and amenable to medical advice and guidance.

COLD IN THE HEAD* ITS EFFECT UPON THE SINUSES

By
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The common cold in the head is an acute inflammatory condition of the mucous membranes lining the nose and adjacent parts. It is a disease to which almost every one at sometime in life is subjected. It is responsible for a great economic loss annually. (The loss of time from the common cold is as great as that from all other diseases put together.) The cold usually runs an uneventful course, but has in many instances been the forerunner of serious and even fatal ailments.

We find from ancient history, including the writings of Hippocrates some four hundred years B. C., that people suffered from acute respiratory epidemics which affected the nose, and that in many cases the nose was relieved when it would drain. We feel that they must have suffered from attacks of the common cold.

Hippocrates also stated that "if the summer be dry and northerly and the autumn rainy and southerly, headaches occur in winter, with coughs, hoarseness, coryza and in some cases consumption; but, if the autumn be northerly and dry, it agrees well with persons of a humid temperament and with women; but others will be subject to dry ophthalmia, acute fevers, coryza and in some cases melancholy."

The art of medicine has progressed through the ages and now we are beginning

*With the collaboration of Jesse P. Chapman, A. B.

*Read before the Association in annual session, Mobile, April 15, 1941.

to learn some few things not to do in the nose and, with great research work aided by science and industry, we can well repeat those words of A. Lawrence Lowell, who said, "the physician of today stands upon the prow of the ship of civilization."

No definite organism or virus has been decided upon as the sole cause of the common cold limited to man. The bacterium or virus is probably the symptom producers locally and generally.

Levin¹ states that the etiologic factors in colds are physical, pathologico-anatomical and infection.

The first and second etiologic factors have been considered in the annals of the Pickett-Thomson Research Laboratory up to 1932, as well as in other articles up to the present time, and are briefly summarized as follows: Physical factors such as exposure, etc., may be precipitating ones affecting the other two factors, either locally or by break down in general immunity.

Gafafer² states: The group with tonsils and adenoids and the group without tonsils and adenoids presented no significant difference with respect to (1) frequency, (2) severity or (3) type of attack of disease of the upper respiratory tract.

Sewall³ describes the disturbance as an inflammatory disease of the nose and sinuses, either infectious or non-infectious in origin. Non-infectious irritants change the mucosa and make it more susceptible to chronic infections.

Allergic inflammation is characterized by edema. There is an immediate swelling of the tissues which may be quite marked, especially in the mucosa. There are no permanent tissue changes ascribed to an acute allergic phenomenon, however. Recurrent attacks must cause some permanent alterations eventually. The inflammation stimulates the submucous fibrous tissue, building a mucosa favorable to bacterial growth and prone to chronic involvement. The discharge from such an allergically altered mucosa is clear in the absence of infection, and the purulent or mucopurulent discharge during sinusitis is the result of infection and the chemotactic activity of the bacteria. The in-

fectious inflammatory process may be either acute or chronic.

Sewall believes that the etiologic agents are pyogenic bacteria which are activated by a filterable virus. The objection that it is often impossible to transmit colds by bacterial inoculation is met by the fact that immunity to colds is not always readily determined experimentally. Most people are immune to colds six months to one year after having one, and the so-called recurrent colds are not reinfections but exacerbations of chronic sinusitis. A second objection, that colds may be transmitted by inoculation with a nasal discharge which has been filtered and is bacteria free, is also easily met. An outside agency is needed to step up the virulence of pyogenic organisms living a saprophytic existence in the upper respiratory tract, and these substances, the aggressins, have an antiphagocytic action, reduce body resistance and increase further the bacterial virulence. They activate the filterable virus, which increases further the virulence of the bacteria to the point where they attack the tissues upon which they normally live harmlessly.

A satisfactory reservoir where these pyogenic organisms are held in the tissues must be present, and such a reservoir probably is furnished by a chronic sinusitis, which Sewall maintains is the endemic reservoir for the perpetuation of the common cold.

The morbid changes characteristic of the common cold depend upon the histologic structure of the mucous membrane. We are told that three types of mucosa are seen: the normal adult mucosa, the altered mucosa and the diseased mucosa.

The normal mucosa is very thin and is composed of a fibrous layer, with blood vessels or glands and a few goblet cells. The protective agents of this are the cilia and a mucous secretion. Each chronic inflammatory attack, however, increases the fibrous tissue, so each succeeding cold which entirely heals promotes greater resistance to disease. This is on account of the normal defenses, so chronic sinusitis is seldom seen in this type of mucosa; but, if you do see it, you will find it most likely purulent.

In the altered type of mucosa, the tissue is edematous, thicker and contains more medium for infection. The bacterial action at

1. Levin: Eye, Ear, Nose, and Throat, 1939.

2. Gafafer: Eye, Ear, Nose, and Throat, 1937.

3. Sewall, E. C.: Sinusitis Allergy and Common Cold; Conception of Their Relationship, Arch. Otolaryng. 22: 425-434 (October) 1935.

first is like that of non-infectious agents, causing a clear, watery exudation; but, as the chemotactic action takes place, there is an accumulation of serum and cells in the sinuses, and they discharge. As time passes the discharge becomes more viscid and, as the first line of defense disappears, they drain inadequately. When recovery is not complete, then eventually a chronic sinusitis results. This would give a chronic hyperplastic sinusitis, which is the most common form of chronic sinusitis.

The diseased mucosa which is found in chronic sinusitis is always chronically infected. Exacerbations of this type are most likely to be confused with common colds.

The maxillary sinuses are the largest of the paranasal sinuses, and since they are present at birth, one may have an early infection of the young. By continuity the mucosa of the maxillary antra shares in all the inflammatory reactions within the nasal passages.

Mahoney⁴ states that weather conditions and heredity play an important part in the production of infection in the upper respiratory tract, while diet, hygienic surroundings and malnutrition play a minor part.

The maxillary sinuses when severely infected become very persistent. This is no doubt due to their anatomic set up. The ostia, being located at the topmost point, give poor drainage, and the inflammation about the natural opening causes a crowding in, so ventilation is poor. To get drainage the antrum has to fill completely and by so much retention one gets a persistency. A history of frequent colds causes one to think of sinus infection.

It was Ford Robertson who stated that many have bacteria in the mouth and have no systemic effect, but the minute they are bottled up systemic disturbance begins.

For years it was thought that sinus infection was limited to certain parts of the country, but now it is found to be world wide.

It has been proven by such men as Pemberton that in foci of infection we carry excess blood sugar, and that the sugar rapidly disappears as the foci of infection are removed. His summary is that the delayed sugar removal following ingestion stands in

close relation to the phenomena of arthritis on the one hand and the influence of focal infection on the other.

What takes place in the blood stream to cause a retention has not as yet been sufficiently solved; whatever it may be, it will be something to take into consideration when dealing with foci of infection of the nasal sinuses.

The most difficult as well as most interesting problem before the medical profession today is a study of a constitutional dyscrasia. Contact infection is never possible unless the constitution of the individual is ready for it. An individual reacts against certain irritations according to the character of his inner qualities we term his constitution. This is found to be true in every form of life.

As an example, a discussion might arise between two bacteriologists concerning a certain type of bacteria. One may claim the changes are from the action of these bacteria, while the other is just as confident that certain changes are of a different nature. They both perhaps are right, for it has been shown that bacteria of the same strain cause different reactions.

There is so much we could say about this old and interesting disease, but time will not permit here to go further, but I would like to mention a few things as to treatment.

Colds in the head are treated prophylactically or symptomatically. Preventive treatment is especially important in young children, in whom upper respiratory infections may be quite serious or severe. Intimate contact should be avoided as much as possible, even to keeping the child home from school. Opinions as to the use of vaccines are divided, yet it seems plausible that the heterogenous vaccines will protect from the secondary or coincident bacterial invaders if not from the filterable virus. Their use should be advised only with reservation since protection is far from 100 per cent. There is no method of producing a passive immunity. Vitamin A has been recommended as a protective measure, but is still debatable, and it may or may not have any effect other than nutritional.

Active treatment consists of measures directed toward symptomatic relief. Rest in bed is one form of treatment that has universal sanction. Codeine and papaverine

4. Mahoney, P. L.: Relationship of Maxillary Sinusitis to Infection in Contiguous Sinuses, Middle Ear, and Lower Respiratory Tract, South. M. J. 29: 999-1002 (October) 1936.

may be given to the older children and grown ups, and codeine added to cough syrups is of much value in controlling coughs. The barbiturates are very good. Codeine and nembutal may be given. As an antipyretic, the salicylates are most useful. The air in the room should be kept slightly humid, not damp, with a humidifier of some make. Drops in the nose have no beneficial effects in so far as the infection is concerned, but may give considerable relief to the patient and afford ventilation and drainage. In so doing they may release the tension of the sinuses.⁵ Nasal spray of pron-tosil (2% aqueous solution) is recommended in the treatment of acute rhinitis.⁶ Installation of a one per cent solution of ephedrine sulphate in saline solution is useful.

Sulphanilamide is very potent in cutting short primary infectious colds when given orally, and in virus colds after secondary infection occurs. It has no action of course on the virus.

Now in conclusion let me say that each individual physician in his daily work and practice needs to be an earnest, painstaking clinician all the time, giving to each of his patients the thorough careful study which will yield him new facts and new light on his science, exercising thought and utmost care in every case. The knowledge and experience which are exchanged at these meetings are the products of individual study and work, and each man's research plant is his own practice, his material, his own patients, his results, and his own thought and achievements.

Knee Injuries—Treatment of the recently injured knee should consist of bed rest, and an ice bag during the stage of acute reaction, to be followed by local heat. Immobilization from onset is imperative. This may be accomplished either by traction or by a dressing of alternate layers of sheet wadding and muslin bandage firmly applied. If possible, aspiration should be delayed until the acute reaction has subsided. Only when locking is present is early operative intervention indicated.

In most instances, a sleeve cast, extending from high on the thigh to above the ankle, is applied and the patient allowed to walk after the first week or ten days.—*Bishop, Texas State J. Med., Sept. '41.*

5. Kennedy, R. L.: Treatment of Common Cold in Infants and Children, *Minnesota Med.* 22: 1-4 (January) 1939.

6. Atchison, R. M.: Neoprontosil in Treatment of Acute Upper Respiratory Infections, *J. Michigan M. Soc.* 39: 560-561 (August) 1940.

IDIOPATHIC HYPOCALCEMIA WITH PURPURA

TREATMENT WITH DIHYDROTACHYSTEROL

By

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Hypofunction of the parathyroid glands causes a disturbance of the calcium metabolism which is evidenced by a low level of calcium in the blood serum. In adults, hypocalcemia usually follows thyroid operations during which the blood supply of the parathyroid glands has been interfered with, or one or several of the glands have been damaged or accidentally removed. Occasionally it appears to be idiopathic. Hypocalcemia generally manifests itself by an increased neuromuscular irritability (tetany). However, calcium has more than one function in the organism. Thus it plays a major part in the coagulation of blood, and any condition that tends to reduce the available calcium ions will exert a deterrent effect upon clotting. Furthermore, calcium influences the tone of the entire vascular system, the permeability of the capillaries and that of the body cells.

In the two cases of idiopathic hypocalcemia to be described here a hemorrhagic tendency was the predominant symptom. Neither of the patients presented signs of tetany. Both were treated successfully with dihydrotachysterol* and became free of disturbances when the blood calcium was elevated to its normal level.

Until recently the accepted treatment of hypocalcemia has been the use of parathormone supplemented by relatively large doses of calcium and vitamin D. Holtz,¹ in the laboratory of Windaus, investigated the toxicity and effect on calcium metabolism of various substances produced by the irradiation of ergosterol. He found that intensive irradiation destroyed the antirachitic factor (vitamin D) but that a fraction remained which powerfully elevated the calcium level of the

*In service at Fort Moultrie, S. C.

*The dihydrotachysterol (Hytakerol) used in this study was kindly supplied by the Department of Medical Research of Winthrop Chemical Company, Inc.

1. Holtz, F., and Schreiber, E.: Einige weitere physiologische Erfahrungen über das bestrahlte Ergosterin und seine Umwandlungsprodukte, *Ztschr. f. physiol. Chem.* 191: 1-22, 1930.

blood. Holtz^{2, 3} subsequently introduced the latter (termed dihydrotachysterol) in the treatment of idiopathic and parathyroprivic tetany and reported consistent successful results. More recently a number of American authors⁴⁻⁹ also published very satisfactory experiences with dihydrotachysterol in cases of idiopathic or postoperative tetany. They pointed out that dihydrotachysterol possesses a relatively low toxicity, can easily be taken by mouth and requires only small doses to maintain a normal calcium level. It was observed that patients responded with variable rapidity to the drug; therefore the treatment should be individualized. Until a definite maintenance dose is established the serum calcium should be determined at frequent intervals.

REPORT OF CASES

Case 1: H. R., a white female, aged 26, complained of profuse menstrual hemorrhages, nose bleed, and of a tendency to bruise. At the onset of her present illness, about one year ago, her serum calcium was found to be 3.0 mg./100 cc. and her blood coagulation time 29 minutes. Treatment with calcium by mouth yielded apparently good results at that time. A few months later, however, she experienced a severe nose bleed lasting two days and also bled profusely at her next menstrual period. Furthermore, she observed that during the last year she bruised more easily during her menstrual period. There were no blood dyscrasias in her family. Physical examination was essentially negative except for large bluish subcutaneous purpuric areas on the

arms and legs. Laboratory examination showed the serum calcium to be 4.5 mg. per cent.

Treatment consisted of 2 cc. of dihydrotachysterol by mouth twice daily for 2 days, followed by 1 cc. once daily. In addition 5 Gm. of calcium lactate were given twice daily for 3 days. After this dosage a determination of the serum calcium showed a rise to 5.5 mg. per cent. The patient was then advised to take 1 cc. of dihydrotachysterol every other day and 2.5 Gm. of calcium lactate daily. Under this treatment no further bruises occurred. The level of serum calcium was still 5.5 mg. per cent 6 days later. No side effects from the medication were noted. In order to elevate the calcium level still more the dose of dihydrotachysterol was increased to 1 cc. daily with 2.5 Gm. of calcium lactate. Within 4 days the serum calcium rose to 8.0 mg. per cent and within 12 days to 8.5 mg. per cent. Menstruation during this time was normal except that the patient developed several bruises; however, none was observed during her intermenstrual periods. About one month later the serum calcium had risen to 11.0 mg. per cent. The dose of dihydrotachysterol was then reduced to 1.0 cc. twice weekly, supplemented by 2.5 Gm. of calcium lactate. The patient, however, did not continue to take dihydrotachysterol and about a month and a half later developed two large bruises during a menstrual period. The serum calcium had fallen to 9.0 mg. per cent. Administration of dihydrotachysterol was then resumed. About 5 weeks later the patient was in good condition; her serum calcium was 9.96 mg. per cent. From then on she regulated her treatment according to her tendency to bruise.

Case 2: K. C., a white male, 6 years of age, had suffered from attacks of bleeding following cuts or bruises since he was 8 months old. About 2 months ago a fall on the left knee was followed within twenty-four hours by marked swelling with inability to walk. The knee was treated at home with local applications for one week. Because of a severe intractable epistaxis accompanied by frequent vomiting of blood, he was hospitalized and given two blood transfusions. Physical examination on admission to the hospital revealed the boy to be markedly underdeveloped and undernourished. He appeared to be acutely ill. On the left side of his lip a small subcutaneous hemorrhage had occurred. The elbow and knee joints were swollen and seemed to contain blood. The mobility of these joints was limited and painful. There were also several small areas of purpura on the right leg. Laboratory examination of the blood on admission gave the following result:

Hemoglobin—65%
Red blood count—3,840,000
White blood count—10,000
Reticulocytes—16%
Platelets—228,900
Coagulation time—25 plus minutes
Serum calcium—2.5 mg. per cent

The patient was treated with a daily dose of 30 drops of dihydrotachysterol and 3.0 Gm. of calcium lactate by mouth. Within 4 days the serum calcium increased to 6.5 mg. per cent and within

2. Holtz, F., Gissel, H., and Rossmann, E.: Experimentelle und klinische Studien zur Behandlung der postoperativen Tetanie mit A. T. 10, *Deutsche Ztschr. f. Chir.* 242: 521-569, 1934.

3. Holtz, F.: Nebenschilddrüseninsuffizienz, *Deutsche med. Wchnschr.* 65: 750-752 (May 12) 1939.

4. Arnold, C. H., and Blum, H.: The Control of Hypoparathyroidism, *West. J. Surg.* 44: 546-555 (September) 1936.

5. MacBryde, C. M.: The Treatment of Parathyroid Tetany with Dihydrotachysterol, *J. A. M. A.* 111: 304-307 (July 23) 1938.

6. Pickhardt, O. C., and Bernhard, A.: The Treatment of Postoperative Tetany with Dihydrotachysterol, *Ann. Surg.* 108: 362-373 (September) 1938.

7. Hurxthal, L. M., and Claiborne, T. S.: The Treatment of Tetany with Dihydrotachysterol (A. T. 10), *New England J. Med.* 220: 911-916 (June 1) 1939.

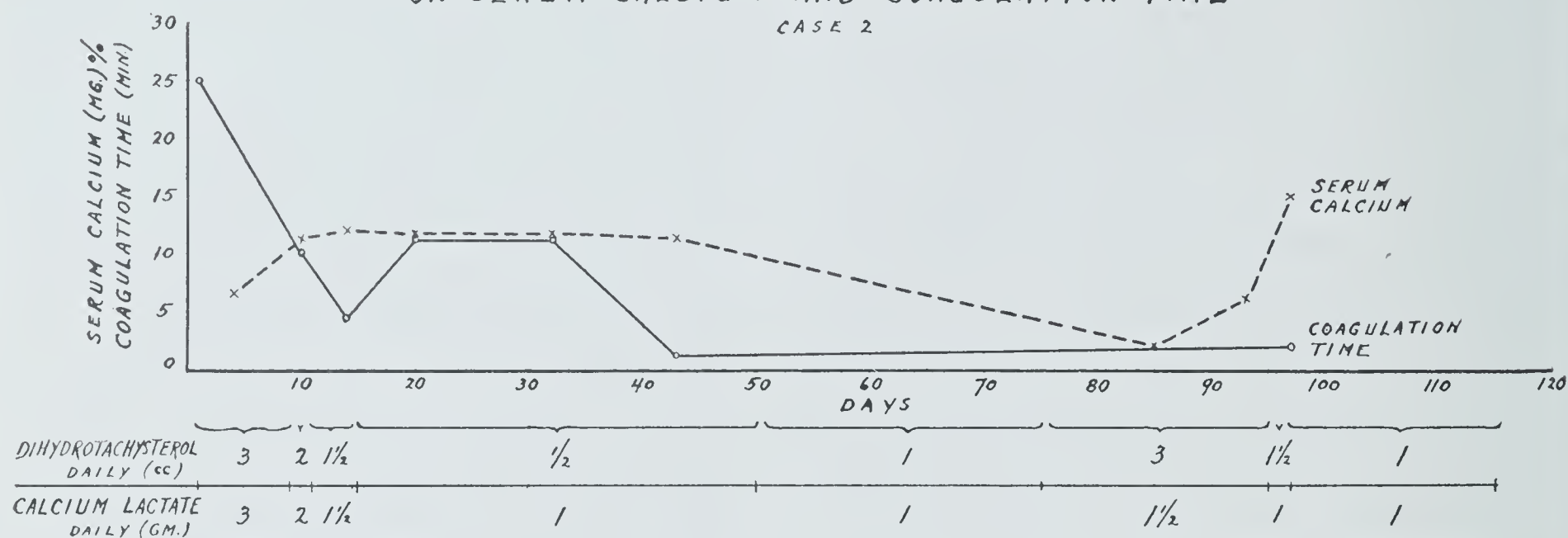
8. Rose, E., and Sunderman, F. W.: Effect of Dihydrotachysterol in Treatment of Parathyroid Deficiency, *Arch. Int. Med.* 64: 217-227 (August) 1939.

9. Curtis, J. K.: Parathyroid Insufficiency Treated with Dihydrotachysterol (A-T 10) *Med. Clin. North America* 24: 833 (May) 1940.

FIG 1

EFFECT OF DIHYDROTACHYSTEROL AND CALCIUM LACTATE
ON SERUM CALCIUM AND COAGULATION TIME

CASE 2



10 days to 11.5 mg. per cent. Concurrently the coagulation time decreased to 10 minutes. The daily dosage of dihydrotachysterol was then reduced to 5 drops and that of calcium lactate to 1.0 Gm. However, this proved to be insufficient since the serum calcium subsequently fell again to 2.0 mg. per cent. With an increase of the dosage it rapidly rose and the calcium level as well as the coagulation time became practically normal within 2 weeks. The behavior of the serum calcium level and blood coagulation time in this case is illustrated in Figure 1.

COMMENTS

The symptoms, physical and laboratory findings in both cases differ from those found in other blood dyscrasias. Thus the serum calcium is normal in hemophilia, the hemorrhagic diathesis of obstructive jaundice and other diseases associated with vitamin K deficiency, idiopathic and symptomatic purpura, as well as in the rarer blood dyscrasias which are characterized by a hemorrhagic tendency. On the other hand, coagulation and bleeding times are usually normal in cases of tetany. A new term, idiopathic hypocalcemia with purpura, is therefore proposed which does not attempt to explain the etiologic factors involved, but merely describes the clinical symptomatology.

In both cases the administration of dihydrotachysterol with calcium lactate resulted in a rapid elevation of the serum calcium level to normal. Simultaneously the blood coagulation time became normal and the hemorrhagic tendency disappeared.

SUMMARY

Two cases of idiopathic hypocalcemia with purpura are presented. In one, a young wo-

man, the hemorrhagic tendency manifested itself chiefly in menorrhagia and subcutaneous hemorrhages; in the other, a boy 6 years old, in epistaxis, prolonged bleeding following cuts and subcutaneous hemorrhages. The main laboratory findings consisted of low serum calcium and a prolonged blood coagulation time. The term idiopathic hypocalcemia with purpura serves best to describe this rare clinical syndrome. Both patients responded promptly to treatment with dihydrotachysterol and calcium lactate.

SYPHILIS IN PRIVATE PRACTICE

1938 AND 1940

By

CLARENCE K. WEIL, M. D.

And

HENRY J. CLIMO, M. D.

Montgomery, Ala.

In August 1939, one of us reported with Smith, in this Journal, observations on a year's experience with syphilis in private practice. At this time we should like to compare our experiences in 1940 with those of 1938 in order to show the changes in the incidence of syphilis which have resulted from the syphilis campaign.

TABLE I

	1938	1940
Total number of serologic tests.....	362	615
Serologic tests on white patients.....	196	288
Positive serologic tests on white patients	12	12

Percentage serologic tests on white patients	6.1	4.1
Serologic tests on negroes.....	166	327
Positive serologic tests on negroes.....	57	55
Percentage serologic tests on negroes	27.1	17
Number of spinal fluid examinations	20	28
Number of darkfield examinations ...	8	10

In 1938, 362 serologic tests for syphilis were taken in our office; in 1940 the number was 615. In 1938, on white patients, there were 196 tests taken with 12 positives. In 1940, on white patients, there were 288 tests taken with 12 positives. In 1938 the percentage of positives in white patients was 6.1, while in 1940 the percentage of positives was 4.1. In 1938 the number of serologic tests on negroes was 166 with 57 positives, and in 1940 it was 327 with 55 positives. In 1938 the percentage of positives in negroes was 27.1, while in 1940 it was 17.

In 1938 the number of spinal fluid tests was 20, and in 1940 it was 28. In 1940 the spinal fluid tests among white patients was 12 and all were negative; in negroes it was 16 with 2 positive. There were only a few more spinal fluid tests in 1940 than in 1938, but in both these years we took one spinal fluid test for each three positive serologic tests.

In 1938 the number of darkfield examinations was 8, and in 1940 it was 10. The number of darkfield examinations done in the two years was almost the same, but when it is realized that only 10 darkfield examinations were made it is obvious that patients do not consult their physicians in the primary stage of the disease. Education of the public to consult a physician for every genital sore is the outstanding need if further success is to be expected.

These figures bring out the following comparisons: 1. There were almost twice as many serologic tests in 1940 as in 1938. 2. The percentage of positives in white patients dropped from 6.1 in 1938 to 4.1 in 1940. 3. The percentage of positives in negroes dropped from 27.1 in 1938 to 17 in 1940. 4. These figures indicate a reduction of the incidence of syphilis in white patients by about 30% and among negroes by about 37%. This may have been partly due to a greater index of suspicion on the part of the physician, but it certainly suggests a decrease in the incidence of the disease. Such a decrease is probably a result of the syphilis campaign.

During 1940 we found it much easier to get information as to the sources and contacts than we did in 1938, and we had much less difficulty getting serologic tests on almost all the patients. Less difficulty was encountered in persuading patients to take treatment and there was less hesitancy about telling how long treatment would take than in previous years. We have been disappointed in the number of patients who have completed their entire course of treatment and we feel that this problem is entirely a financial one. We have tried to make fees for this type of service moderate because of the long duration of treatment, and we have foregone fees during periods of unemployment. In the case of negroes we have made fees absolutely minimal, but we feel that many have given up treatment entirely because of their inability to make any payment. We have tried to overcome this by giving all patients a chance to go to the free venereal clinics, but until recent months have found an unwillingness, even on the part of the poorest and most ignorant, to go to the public clinics. Recent improvement in these clinics has to some extent overcome this difficulty.

RECOMMENDATIONS

1. More education as to the significance of genital sores is essential if patients are to be seen and treated during the early stages of syphilis.
2. There should be some way of compensating the private physician for the treatment of syphilis. This would make case-holding more successful and prevent incomplete treatment.

Retropharyngeal Abscess—The posture of the child is occasionally pathognomonic of retropharyngeal abscess. There is a tendency for the patient to tilt the head towards the healthy side and hold it in that position with some degree of rigidity. Many times the diagnosis is made by the characteristic posture of the head when the patient enters the doctor's office.

The diagnosis of post-pharyngeal abscess frequently offers some difficulties for the general practitioner. The true identity of the disease is not revealed until the process in the throat has become large enough to cause respiratory obstruction. The child refuses food, violent general reactive symptoms are in evidence and occasionally one hears an irritative cough not unlike that of croup.—*Furstenberg-New Orleans M. & S. J., Oct. '41.*

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NATIONAL NUTRITIONAL PROBLEMS

"It is not difficult to explain the importance of providing nutritious food for the Army and Navy. That is readily understood by everyone. . . It is not so plain to most men, to some administrators and even to many physicians why all need to be equally concerned, at this time of pressing needs of many kinds, with the nutritional adequacy of the diets of American civilians. There is enough food on hand, even a surplus, so called. Why then the concern; why a national nutritional campaign, a nationwide organization to improve nutrition, a Conference on Nutrition for National Defense, called by the President?"

"The crux of the matter is that the average American diet in many respects is poor, not in amount, but in quality." Thus does Wilder¹ state the case in his excellent consideration of this subject. And the Rochester clinician goes on to tell us that "food habits, however, affect unfavorably the picture of American nutrition even in the case of families with liberal incomes. Cakes, pastries, candies, sweet drinks, the ubiquitous cocktail and other alcoholic beverages introduce many calories without accompanying vitamins or salts. In consequence the supply of calcium is inadequate, unless more milk is

taken than many persons drink. Also the supply of thiamine is likely to be borderline, unless more meat is eaten than many persons like. The leafy vegetables were looked on until recently as good sources of most of the vitamins. We now know they are not good sources of thiamine and the better sources of thiamine, such as peas, beans and nuts, are not consumed in sufficient amounts nor with sufficient regularity to contribute substantial amounts of thiamine."

The author reminds us that "the so-called protective foods, green vegetables, fruits, the dairy products and meat, are relatively expensive foods, at least for city dwellers." And then he asserts that "there can be no doubt about the existence of much more malnutrition than we as physicians have been willing to accept. Frank deficiencies we always could detect: pellagra, beriberi, scurvy and rickets, but the number of cases of any of these frank diseases is relatively small in most of the states, and their low incidence has blinded us to the significance of the subclinical or submarginal deficiency. Most people on insufficient diets are not sick enough to call physicians, yet generally they are far from well enough to meet effectively the stresses and strains of ordinary living." And Wilder is inclined "to believe that malnutrition is contributing importantly to the rapidly increasing incidence of chronic nervous exhaustion and other so-called degenerative abnormalities."

And, in the author's final paragraph, we read that "we cannot expect overnight to correct the nation's diet, but working together we can accomplish much that should be profoundly beneficial. The end results, indeed, are likely to equal those which come from applying to sanitation the knowledge of bacteriology. Our position today in nutrition is very much like what it was in sanitation at the turn of the century. Then, as now, much of the science involved had been accumulated recently, but had not yet been put to work. It took the Spanish War and the epidemics of typhoid in Florida and yellow fever in Cuba to spur activity then in the field of sanitation; one good that should come from the present war should be a comparable extension of effort in this new field of preventive medicine, nutrition."

Wilder has indeed spoken well and, be-

1. Wilder, Russell M.: Nutritional Problems as Related to National Defense, Am. J. Digest. Dis. 8: 243 (July) 1941.

cause of his experience and eminence, this excellent presentation of many of the aspects of American malnutrition will doubtless receive the attention to which it is entitled. And it is encouraging to realize that something is at last being done to correct, or at least, lessen this deplorable state of affairs. Not only is malnutrition in all of its aspects being subjected to intensive study and research, but the Surplus Marketing Administration and other governmental agencies are beginning to bring about a better distribution of food among those groups least able to afford a well-rounded diet. And this is indeed a far cry and a most welcome change from the preposterous days of an "economy of scarcity" when crops were plowed under and little pigs were slaughtered.

MEN IN SERVICE

Sixty-two members of the Association have been called to duty, according to the records of the secretary's office. If there are omissions, or errors in post or commission as given below, corrections will be appreciated.

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THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THE MEDICAL OFFICER OF HEALTH IN THE PRESENT CRISIS*

By

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Montgomery, Ala.

From the quantity point of view this Conference of State and Provincial Health Authorities of North America—with an active membership of something less than 70—can hardly boast of great numerical strength. And yet this group, pitifully small though it be in numbers, has for 56 years, and oftentimes in the face of pinching difficulties, tenaciously clung together. Each passing year has witnessed the gathering of its members from the most distant parts of this continent with but a single thought in mind: to better prepare themselves, through the pooling process of experience and thinking, to render an improved type of health service to the population groups for which each was officially responsible. Altruism and service, untainted by any semblance of self-aggrandisement or political preferment, have ever been its keynote. And yet, despite and likely because of, its non-official status, it has wielded an incalculable power for good in the field of public health throughout the North American continent, whose beneficent effects have been reflected in the remotest corners of the globe.

Today, amid a world aflame with hatred and greed, with rivalry and jealousies, and with the forces of destruction in the ascendency, this small yet potent band of administrative health officials, motivated still by a desire for constructive public service, again resumes its annual deliberations.

To those of us who participated in the deliberations of this conference but one brief year ago, there come to mind weird reminiscences of those fateful days in early May 1940, when the mighty mechanised forces of Nazism were unleashed upon the smaller, disunited nations of Europe, whose geographical placements stood as stumbling

blocks to the frenzied aspirations of a pathologic, mystical demagogue. At that time, it will be recalled, we were privileged to sit in joint session with the Pan-American Conference of the National Directors of Health, which conference had been brought together in the city of Washington under the able leadership of Dr. Hugh S. Cumming, a former Surgeon General of the United States Public Health Service and now serving as director of the Pan-American Sanitary Bureau.

In these troublous times, when the people of the United States and the other countries of the North American continent are facing such a multiplicity of vexing health problems, it is felt that this conference is to be congratulated upon the great privilege it has of contributing mightily to the well-being of all humanity. At the same time, it is also felt that our peoples are to be congratulated upon having the services, the enthusiasm and the collective thinking of a group of this kind.

It may be said of organisations in general, as the learned Dr. Samuel Johnson once said of newly printed books, that of them "there is no end." Of organisations of this kind, however, there are not enough. For, unlike the vast majority of many organised groups, the Conference of State and Provincial Health Authorities of North America is animated by the passion for truth which marks the true scientist, whether in the field of public health or in any of the other scientific realms. Like other organisations functioning in the scientific field, this group is international in its thinking and in its approaches. It serves but a single master, humanity, and in so serving it enjoys an immunity from the narrow sectionalisms and petty jealousies so characteristic of our times.

Let us not, too, lose sight of the exceptional opportunities which this crisis affords for the development and practice, within ourselves, of those qualities for leadership in all matters pertaining to health; of playing the role of coordinators and integrators for the numberless agencies, federal, state and lo-

*Presidential address delivered before the Conference of State and Provincial Health Officers of North America, Washington, D. C., April 28, 1941.

cal, official, and voluntary, whose activities and programs should be closely interlocked with those of official health departments; of rendering to those responsible for the development and perfection of the fighting forces of the nation—the Army and Navy—an incalculable service in the fields of sanitation and in the control of the communicable diseases, including the venereal diseases; of assisting, in numerous and effective ways, the medical profession in its efforts to develop programs for prehabilitation of the many draftees found to have remediable defects.

The members of this conference are fortunate, too, in having powerful allies similarly circumstanced, who, like ourselves, can serve humanity in the altruistic spirit.

I refer specifically to the unfailing and continuing appeal which the cause of public health, since its earliest gropings, has made to the many philanthropic institutions, which are living exponents of the nation's resourcefulness, vision and wealth. It has been both a stimulus and a source of gratification to health workers that the cause for which they themselves were battling has been able to enlist the interest and financial support of practically everyone of the half-hundred or more of such worthy institutions. Difficult indeed would it be to compute the sum-total of good which these institutions, untrammelled by entangling restrictions, have been able to contribute not only to public health but in every field for human betterment—educational, social and cultural. For certain of those institutions, one particular field of activity has had a greater lure than have others. It seems fitting at this time that the members of this conference should record their appreciation for the contributions and support given by those foundations whose major interests have been concentrated upon certain of the tremendously important health problems in which we have an immediate and vital concern—problems of improved health organization and of training public health personnel; problems of nutrition and of the deficiency diseases about which, at present, we know all too little; problems in biostatistics and its many implications, problems for the more effective control of the communicable diseases, particularly those falling within that elusive group of virus diseases, as well

as those calling for wide-spread environmental control.

Conspicuous among our allies in these special fields stand the Rockefeller Foundation, the Commonwealth Fund, the Milbank Memorial and the Rosenwald Fund, as well as others. The time factor precludes even an enumeration of the many benefits resulting from their efforts. One must pause, however, sufficiently long to point to the fact that, when the final story is recorded of the stupendous labors now being expended by the scientific workers of the Rockefeller Foundation toward the mastery of influenza and rabies, yellow fever and malaria, all mankind will play the role of debtor.

Even in normal peace-time this conference devotes much of its allotted time to the work of its 18 authorized committees and to the full discussion of the manifold health problems brought before it through these channels. This year, because of the volume of the work to be received and acted upon by this conference and occasioned by the nation's defense program, four full days have been set aside for committee conferences and their discussions. Under these circumstances it does not seem the part of wisdom for your presiding officer at this time to do more than briefly touch upon certain problems, the proper solution of which, because of the present crisis, calls for prompt and accentuated effort. Experience already has shown that, in practically every phase of the national defense program, there arise problems of great magnitude and of direct concern alike to health workers and to the medical profession. Difficult indeed it is for the average citizen to visualise what indispensable cogs trained health workers and physicians are in the nation's defense machinery—an absolute necessity in matters relating to the draft, venereal disease control, industrial hygiene and environmental sanitation, as well as in matters relating to the sick individual, whether he be soldier or civilian.

As your president, and also as one whose activities bring him in intimate contact with the defense problems of organized medicine and of medical education, I invite your serious consideration to the difficulties now existing in a national defense program of totally unpredictable duration as these relate to the meeting of the demands for properly trained medical personnel to serve both

the military and civilian needs of our nation. In a very real and terrifying sense the world's play-fields have become the world's battlefields, creating a situation hitherto unknown in which those engaged in the most unmilitary pursuits have, perforce, borne the brunt of battle.

Careful and long-range planning becomes immediately imperative if we are to obviate some of the catastrophic blunderings of the last war, when but little heed was paid to needs other than the military. In an age so highly mechanistic and in time of crisis, industrial and civilian health must be kept to the highest practicable level. With no thought of seeking exemption privileges—merely a deferred status—for either the full-blown medical man or for the medical student in the making, both the medical profession as a whole, as well as the deans of our medical teaching institutions, have definitely reached the conclusion that it would be most unwise to permit any interruption to the steady stream of medical students flowing through our medical schools, from which source replacements must come. How best to procure the desired deferred status for the medical student and intern under present provisions of the Selective Service Act, which does not permit blanket deferment for any particular group, has been a source of deep concern to all those who understand and appreciate the need for such a policy. The many serious implications of what a total national preparedness program actually means are fast gaining momentum. One observes, also, a marked change of attitude on the part of the thinking public for the necessity of a more liberal and enlightened interpretation being placed upon the Selective Service Act. This is clearly reflected in the most recent Gallup poll, which posed this question: "Should students studying to be doctors and engineers be permitted to finish their present training course before being drafted into the Army?"

The recorded replies were 87 per cent in the affirmative and 13 per cent in the negative.

So unworkable and hampering have proven the provisions of the present Act in regard to the medical student, that Senator Murray, on February 6, 1941, introduced into the Senate S. 783 which sought to remedy those defects. Hearings before the Senate

Committee on Military Affairs have already been held and it is not felt that the defects of this suggested legislation need be dwelt upon before this Conference. These were clearly brought out in the hearings and the views of the organized medical profession and of the heads of the medical institutions were incorporated in a suggested amendment submitted by Dr. Morris Fishbein of the American Medical Association. The changes suggested by Dr. Fishbein, if incorporated into such final legislation as may be enacted, would, in the opinion of your president, materially simplify and improve the present confused status of the whole situation.

It is therefore recommended that this conference go on record as giving approval to the principles expressed in the memorandum submitted to the Congress by Dr. Fishbein for incorporation into such further legislation as may be deemed expedient.

Pending the adoption of legislation which would make deferment automatic, it behooves the members of this conference to exert every influence to see that there be no interruption to the production of the finished product in medicine. Looking to this end it is recommended that approval be given to the following resolution, the substance of which was recently adopted by the Advisory Council on Medical Education of the American Medical Association.

"Resolved, That it is the considered opinion of The Conference of State and Provincial Health Authorities of North America that the future health needs and proper medical care of the nation and of the defense forces require that there be no interruption in the stream of adequately trained physicians. To that end this Conference urges that local draft and appeal boards permit deferment of medical students and interns on an individual basis as provided in the Selective Service Regulations until the completion of their professional preparation, to insure an adequate number of well trained physicians for the national needs of the future; and be it further

"Resolved, That officials of the Army, Navy and Selective Service System be asked to approve the action of the local boards in granting individual deferment of registered and entering medical students and interns in order that the medical schools and hospitals may insure a continuous supply of properly qualified physicians for the civilian and military needs of the country."

The problem of providing an adequate supply of properly trained public health personnel, seriously acute even in times of peace, has already become many times augmented because of the nation's defense pro-

gram. It likely constitutes the most urgent immediate problem which will claim attention by this conference. The present Chairman of the Committee on Public Health Personnel, sensing the urgency of the situation, has wisely arranged for full and free discussions with our consultants and advisers from the faculties of the teaching institutions with the hope of further expanding existing teaching facilities. In order to partially meet the present urgent needs the United States Public Health Service is to be commended for the move already taken in the establishment of a field training area, utilising all available resources of the National Institute of Health, of the Maryland State Health Department and of the public health facilities of the adjacent military posts and industrial plants. In the recruiting of personnel suitable for receiving such intensive training, the state health departments should give every possible assistance, and use their best judgment, in the selection of personnel to be recommended for such training.

In the present atmosphere of instability and insecurity of health departments, resulting in no small part from the combined forces of the paucity of trained personnel and the severe, yet seemingly inescapable, inroads made by the armed forces of the nation, your president suggests that the appropriate committees of this conference give earnest thought to the possibility of developing a greater uniformity in salary scale for comparable services than now prevails throughout official health departments. These wage differences are so great in many instances as to make it difficult, if not impossible, for certain health departments to withstand the inroads made because of these inequalities.

Reference has already been made to the Murray Bill and certain other legislation now under consideration. I should also like to express approval of the May Bill, with which most of you no doubt are familiar. It provides, in brief, that the Secretaries of War and of the Navy shall be authorized to establish zones around military camps and naval stations within which the practice of prostitution shall be made a federal offense, subject to a fine up to \$1,000 or imprisonment up to one year, or both. It is well to observe that the measure's terms are broad, covering not only the women involved in prostitution, but also the sorry gang of fel-

low-travelers who profit by aiding and abetting it.

Although no official working agreement has been developed between the health authorities of the United States and Mexico, it is pleasing to report that the Mexican officials have shown a fine spirit of cooperation and a sincere desire to do everything possible to protect American troops on off-duty excursions across the international border.

The friendly, cooperative spirit shown by the Mexican health officials is typical of that manifested by health authorities of the Western Hemisphere. The threat to democratic institutions and our free way of life has served to unite and unify the peoples and nations of North, Central and South America and to arouse in all a sincere desire to present a united front to all enemies.

This new spirit is happily symbolised by the Pan-American Sanitary Bureau, under the competent direction of Dr. Hugh S. Cumming. Inasmuch as this Bureau is now serving as a clearing-house for health problems of the North and South American continents, it is suggested that the good offices of this important agency be invoked for the purpose of developing such cooperative plans as seem necessary for the better control of this border problem.

In this connection I should like to make brief reference to the request made by the Surgeon General of the Public Health Service of the state and territorial health departments that, in so far as possible, they avail themselves of the rare opportunity afforded by the Selective Service Act for epidemiologic studies relating to syphilis. While apparently but few states undertook the task, our studies in Alabama have proven of real value.

We have been highly gratified by the manner in which these tests were conducted, by the cooperation shown both by the registration authorities and the registrants, and particularly by the knowledge we ourselves have gained. Slightly less than 60 per cent of all the registrants took the tests, and laboratory reports, not yet quite complete, indicate that slightly less than nine per cent were positive. We are confident that the complete reports will show an infection rate of not more than two per cent among white registrants and a rate of not more than 20 per cent among Negroes. Both of these rates are considerably lower than those formerly

believed to prevail. Thus, for the first time, we have established a measuring rod for syphilis in Alabama which approaches accuracy.

Even more important is the fact that we have the names and addresses of those whose tests were positive. We have urged them to have second tests made, and if such second test proves positive, we are endeavoring to have the individual brought under proper treatment. This alone will justify the expenditure of time and effort involved in the study.

It will be recalled that at a special meeting of the State and Territorial Health officers with the Surgeon General of the Public Health Service, held in Washington last September, an appeal was made by the Federal Director of the National Youth Administration for the cooperation and sponsorship by this group of the program to be launched in the several states. After a rather full explanation of the purposes and objectives of the contemplated program and the pointing out of the need for complete cooperation and understanding on the part of the practicing medical profession, approval was given to the sponsorship of the program by the state and territorial health officers.

Your president would like to point out that, because this very sizeable group—comprising some 500,000 to 1,000,000 youths—embraces much of the nation's future industrial and military manpower, it affords an exceptional opportunity for health workers, for the entire medical profession and for the responsible federal agencies, to inaugurate a broad and inclusive program of prehabilitation and education for this youthful group along lines similar to that suggested by the Medical Advisory Council to Selective Service in the matter of procuring for registrants the correction of remediable defects revealed through physical appraisals already made.

It is therefore recommended that the members of this conference go on record as giving approval to the inauguration of a similar program by the National Youth Administration.

It is likewise the feeling of your president that the health and medical phases of the programs conducted by the Farm Security Administration throughout the vast rural stretches of our nation offer to the medical profession and to health workers the oppor-

tunity for the promotion of cooperative relationships which, if soundly developed and adhered to, should prove of mutual benefit alike to the medical profession and to the low-income groups served. Speaking from the experiences thus far had in Alabama, it may be said that, while widely varying degrees of success have been noted, the plan has sufficient possibilities and merit to warrant administrative health officers in taking a more active interest in its promotion, by assuming the role of liaison officer between the practicing medical profession and the administrative agents of the state and local programs.

In closing, may I be permitted to address a few brief remarks particularly to our Canadian colleagues; and for the reason that most of what has been touched upon above has dealt with emergent problems peculiar to the states, and for which, no doubt, our Canadian associates have already found some sort of solution. The mere fact that they have been asked to consider with us these pressing problems is a token of our concept of them as one of us, as well as of the spiritual oneness of our two countries.

The American way of life which the United States is preparing to defend, by force of arms if necessary, is a bigger thing than can be encompassed within the boundaries of this one nation. In its broadest and best sense, it is also the Canadian way of life and the way of life of all those who love freedom and abhor oppression and tyranny.

In 1863, when the peoples of the United States were locked in the throes of civil strife, the great Disraeli spoke as follows:

"There is grave misapprehension, both in the ranks of Her Majesty's Government and of Her Majesty's opposition, as to what constitutes the true meaning of the American democracy. The American democracy is not made up of the scum of the great industrial cities of the United States, nor of an exhausted middle class that speculates in stocks and calls that progress. The American democracy is made up of something far more stable, that may ultimately decide the fate of the two Americas and of Europe. . . ."

A later British Prime Minister has paid another tribute to this country's part in world affairs and world peace. In 1935, the year Hitler launched his wild scheme for world conquest by remilitarising the Rhineland, Stanley Baldwin made this observation:

" . . . I have always believed that the greatest security against war in any part of the world, in Europe, in the East, anywhere, would be the closer collaboration of the British Empire with the United States of America. The combined powers of the navies, the potential manpower, the immediate economic blockade and refusal to trade or lend money, would be a sanction that no power on earth, however strong, dare face. It may be 100 years before that desirable end may be attained. It may never come to pass; but sometimes we may have our dreams. I look forward to the future and I see that union of forces for peace and justice in the world, and I cannot but think, even if men cannot advocate it openly yet, that some time those who follow us may see it and know that the peace of the world is guaranteed by those who speak our tongue. . . ."

There is reason to hope—nay believe—that the union of the great English-speaking nations for the defense of the world's freedom is nearer than Lord Baldwin dared hope some six years ago. Physical union may be long delayed, or it may never come. But spiritual union is already here. The hearts of the people of the United States beat in unison with those of the people of Canada and Great Britain and other countries that are actively waging humanity's battles. Young men from our farms and cities have already crossed the border and the broad Atlantic to volunteer for service with the Royal Air Force and the Royal Canadian Air Force. The inexorable drift in world affairs and relationships seems to point that there is an ever-growing likelihood that United States manpower, the full strength of the nation's great industrial power, and its large and powerful fleet will become active participants on the side of right and fair play.

When, with or without this country's active, full-scale participation, the final victory comes, those who shall have won it at such a terrible sacrifice will have, in the words of Lord Halifax, "a sovereign opportunity to show what freedom means, and what it can do for the welfare of mankind."

Finally, may I express to you my deep appreciation for the honor bestowed by selecting me as your presiding officer and also my unstinted thanks to each of you and to our able secretary, whose full cooperation has made my year of service a pleasurable duty.

"The need today . . . is for more protective foods and for getting more of these to the population as a whole."

Committee Contributions

Maternal and Infant Welfare

PITUITRIN

"Drugs and instruments devised for assistance in medical practice are not in themselves harmful, but are rendered so by misuse and abuse on the part of the doctor. In this connection, an outstanding example of the truth of the foregoing declaration is found in the well known oxytoxic, Pituitrin. This agent has a limited though definite, place in obstetrics. Nevertheless, its indications and administration are as varied as the number of physicians performing maternity services. Unquestionably, a contemptuous familiarity with pituitrin has bred in the doctor an utter disregard for its action. This drug is used as a substitute for diagnosis. It is employed for expediency. It is used as a shroud for ignorance in conducting the mechanics of labor. Its indiscriminate and ill timed usage is but another factor in promoting the fatality and mortality records of expectant mothers and newborn babes. It is to the indifferent obstetrical attendant what the gun is to a bandit, a weapon of offense . . . There is no possible circumstance nor set of circumstances that would justify the misuse and abuse of this oxytoxic. Unless physicians recognize the limitations of safety in using pituitrin, and until each and everyone acquaint themselves with its dangers, there will forever be the cry from the maimed and crippled, and a prayer from the dead for emancipation from this life and health destroying drug."

This paragraph forms part of the joint report of the Jefferson County Medical Society and Jefferson County Board of Health following their investigation of maternal deaths in Birmingham and Jefferson County during the period 1931-1935.

Prevention of Cancer

CANCER OF THE LARYNX

The prognosis of cancer of the larynx is much better than is usually supposed. About 80 per cent five-year survivals are reported. Therefore, early diagnosis is important. The most important early sign is hoarseness lasting more than a few weeks in a patient over

thirty years of age. There may be salivation, discomfort in the throat or pain radiating to the ear.

All patients with hoarseness should have a laryngoscopic examination. This examination is relatively simple, does not require expensive equipment, and with a little practice can be done by any physician. A biopsy is made if there is any suspicion of cancer. Other conditions which may cause hoarseness and should be considered in a differential diagnosis are papillomas, syphilis, tuberculosis and laryngitis.

The choice of treatment depends on the location of the growth, its extent, and the degree of malignancy. Each case should be individualized and the choice of treatment depends on the judgment of the laryngologist. This judgment is acquired only by experience. The choice of treatment includes surgical removal, surgical removal supplemented by irradiation, or irradiation alone.

A more detailed discussion of cancer of the larynx is to be found in the cancer Blue Book which has been distributed by the Association's Committee on Prevention of Cancer.

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

SPECIMENS EXAMINED

JUNE 1941

Examinations for diphtheria bacilli and Vincent's	735
Agglutination tests (typhoid, Brill's, undulant fever, etc.)	902
Typhoid cultures (blood, feces and urine)	1,112
Examinations for malaria	2,411
Examinations for intestinal parasites	4,747
Serologic tests for syphilis (blood and spinal fluid)	35,503
Darkfield examinations	47
Examinations for gonococci	2,217
Examinations for tubercle bacilli	1,844
Examinations for Negri bodies (microscopic)	70
Water examinations (bacteriologic)	1,159
Milk examinations	2,173
Pneumococcus typing	7
Miscellaneous	792
Total	53,719

SPECIMENS EXAMINED

JULY 1941

Examinations for diphtheria bacilli and Vincent's	709
Agglutination tests (typhoid, Brill's, undulant fever, etc.)	1,182
Typhoid cultures (blood, feces and urine)	1,450
Examinations for malaria	2,654
Examinations for intestinal parasites	4,071
Serologic tests for syphilis (blood and spinal fluid)	33,214
Darkfield examinations	44
Examinations for gonococci	2,380
Examinations for tubercle bacilli	1,670
Examinations for Negri bodies (microscopic)	50
Water examinations (bacteriologic)	1,301
Milk examinations	2,057
Pneumococcus typing	6
Miscellaneous	2,328
Total	53,116

POLIOMYELITIS VIRUS

Poliomyelitis, like all filtrable virus diseases, does not lend itself readily to laboratory methods of diagnosis. The virus of poliomyelitis, it is true, does have a set of properties which allows it to be identified with as much certainty as are most of the bacteria which cause disease. The difference, however, lies in the ease with which this is accomplished. This virus has been found to occur in the nasopharyngeal mucosa and the secretion thereof, in the intestinal mucosa and the feces, and in the brain and cord of infected individuals. These materials may be used in reproducing the disease in susceptible animals, of which the cotton rat, the monkey (*Cynocephalus hamadryas* and *Macacus rhesus*) and the chimpanzee apparently are the only ones for which this virus is pathogenic. Thus, the host relationship and the tissue affinity may be determined. The virus may subsequently be isolated and cultivated on special artificial media containing living tissue. One may then proceed to make the final study of the physical properties of the virus and with all the accumulated information finally accurately identify it. The virus of poliomyelitis is one of the smallest of ultramicroscopic viruses; it is estimated to be a ten millionth of a millimeter in diameter. All of these methods used in isolating and identifying the virus of poliomyelitis, though satisfactory for research, are expensive and time-consuming and consequently are of no value in general practice.

L. S. S.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

TIME TO REIMMUNIZE AGAINST DIPHTHERIA

The recommended procedure in diphtheria immunization calls for two injections of alum-precipitated toxoid at intervals of one month, beginning when a baby is six months of age. To supplement this the recommendations also call for an additional injection of $\frac{1}{2}$ cc. alum-precipitated toxoid when a child enters school for the first time.

The immunity produced by the two injections is sufficient to carry the child through the danger period of early childhood but entrance to school also means entrance into intimate contact with a large group of children, some of whom are carriers of diphtheria organisms. Therefore, the level of immunity should be as high as possible and to make certain that the antitoxin in the blood stream has not decreased below the protection point the new stimulus of $\frac{1}{2}$ cc. toxoid is given.

Schools in many sections of the state were delayed this year on account of poliomyelitis but the presence of this unusual invader should not interfere with our fight against an annual visitor. Diphtheria incidence begins to rise each year in August and reaches its peak in October, with a large number of cases in each of the fall months.

A seasonal reminder, therefore, to see that children entering school for the first time are given this stimulating dose, is in order. Children, of course, who have missed their original immunization should be given the regular two inoculations. The diphtheria records for the first eight months of this year are slightly below 1940's but August and the first half of September are considerably above, indicating that trouble is still ahead.

BUREAU OF HYGIENE AND NURSING

B. F. Austin, M. D., Director

HEALTH OF THE SCHOOL CHILD

Efforts are being made by all health workers to cause parents and teachers to look upon the school-age period as only one part of a continuous process of living and learning. At any moment the child is the prod-

uct of what has gone on before. There has been a prenatal period of nine months and six good years before entering school. This period has been one of rapid growing, developing and learning. The child has been conditioning, adjusting, adapting himself to people with their beliefs, superstitions, prejudices and ways of doing things. He is becoming adjusted to his total environment. Habits are being formed that are apt to remain throughout life. The foundation for health is laid and example plays an important part in his life because this is the period during which the child imitates most.

The school has a tremendous responsibility during the school-age period in helping the child to live effectively in his community, to influence his present and future health through developing and stimulating continuation of desirable attitudes and habits, and acquiring knowledge and information that function in his daily living; and to help him become increasingly responsible for his own health and the health of others.

There are many individuals and many groups who have a keen interest in and a legitimate responsibility for the health of the child in school. No professional or social group has a monopoly of interest and responsibility for the health of the school child. The family physician should maintain a most active interest in the prenatal, infant, preschool and school-age periods. During the prenatal period the physician has an opportunity few others may obtain to emphasize the value of periodic medical examinations at all ages. Interest in these periodic medical examinations can be stimulated by health workers and others for all age groups but when the physician makes a real examination and gives advice on health definite beneficial results will be accomplished. Improved child health will result only from the harmonious working together of many individuals and groups. Periodic health examinations of school children are made by the personnel of county health departments. In most instances these examinations are not entirely satisfactory because of the lack of time and proper facilities. Nevertheless, many remediable physical defects are observed, parents are notified and corrections made by physicians. Emphasis is placed on health examinations as educative experiences. This presupposes

that parents will be invited to the examinations of elementary pupils and that the physician will have time to explain his findings to the parent and teacher and give detailed information to the nurse for use in the follow-up program.

During the past few years considerable attention has been given to the examination of preschool children previous to their enrollment in school. The summer round-up program of the parent-teacher associations has centered interest on this problem and has achieved marked success in making parents conscious of the need for children to be free of remediable defects on entrance to school. At least one parent is present with each preschool child when the health examination is made at the summer round-up.

In some communities children are referred to their private physician for health examination whenever possible. The physician's findings are recorded and the card returned to the school or health department to be filed. All health workers realize that continued health supervision by the private practitioner is of far greater value than the school examination by the health officer. The referral of pupils to their private physician for examination is good practice only when the physician seizes the opportunity to make an adequate examination and proper recommendations. As an ideal we look forward to the time when all persons will have periodic health examinations made by their family physicians.

BUREAU OF VITAL STATISTICS

Leonard V. Phelps, S. B. in P. H., Director

INCREASE IN REGISTRATIONS

Early in the spring of 1940 it became apparent that the demand for records in the Bureau of Vital Statistics was rising much more rapidly than was to be expected from the upward trend of the previous quinquennium.

As proof of this, the following facts may be quoted. In 1939 a total of 5,344 certified copies of birth and death certificates were issued; in 1940, 10,853; and during the first nine months of 1941, 18,482. It is expected that for the entire year of 1941, approximately 25,000 certified copies will be issued. This figure is more than twice that of 1940 and almost five times that of 1939. Thus, it

will be seen that during the short space of two years the number of copies issued has more than doubled each year. The increase has been entirely confined to a greater demand for birth records. The number of death records issued in 1941 is expected to decline, thereby continuing the downward trend begun in 1939.

Copies of records issued which were not certified totaled almost 40,000 between January and August of 1941. This represents a doubling of the 1940 output on an annual basis.

During the first eight months of 1941 well over 101,000 birth records and almost 6,000 death records were searched. This represents a total number of searches amounting to more than twice those made during the entire year of 1940.

Correspondence in connection with increased registration demands has reached a new all-time high point. It is expected to reach a figure of 60,000 or more before the year 1941 ends.

Corrections have been made on more than 16,000 certificates of birth and 8,000 certificates of death between January and August 1941. It is of interest to note that over 6,000 of the birth corrections were made because of the name of the child. Either it was not placed on the certificate or placed there incorrectly. Over two-thirds of the corrections on the birth certificates involved the name alone or the name and some other item. Before the close of 1941, well over 30,000 certificates will have been corrected.

At the present time about every third certificate filed is for a birth which occurred a number of years ago. This has come about largely because it has become a standard practice for industrial plants having U. S. Government contracts to demand a certificate of birth of their employees before they can start work.

The tremendous number of delayed registrations now being placed on file should prove a real challenge to all attendants at birth. It is quite apparent that the certificate of birth is no longer a record to be filed away and forgotten. Present and future demands for birth certificates will continue to increase. Every physician who attends a birth should be most careful to see that the certificate is accurately completed and promptly registered.

BUREAU OF SANITATION

D. S. Abell, M. S. in C. E., Director

DISPOSAL OF GARBAGE BY THE LANDFILL METHOD

According to the March 28, 1940 issue of the Engineering News-Record a report prepared by a board of health authorities appointed to study landfill practices in New York City was made available on March 15, 1940. The board drew a sharp distinction between refuse disposal dumps and landfills. The article set forth excerpts taken from the report. Some of these follow.

As a result of its observations and studies the board is of the opinion that there are no conditions presently obtaining at the five landfills which endanger the public health or safety. On the contrary, it is convinced that certain potential public health hazards previously obtaining at the sites of these fills have been diminished, for filling is one of the best methods of controlling rats and mosquitoes in marshes and swamps.

The board makes the following recommendations. In doing so it is not intended to imply that the procedures here recommended are not being followed in whole or in part.

1. The disposal of wastes by the landfill method should be planned as an engineering project. Operation and maintenance should be under the direction of a sanitary engineer.

2. The face of the working fill should be kept as narrow as is consistent with proper operation of trucks and equipment in order that the area of waste material exposed during the operating day be minimal.

3. The exposed surface should be covered with earth as promptly as is consistent with proper operation and at the close of each day's operation both the surface and the face of the fill should be completely covered, the object being to make a closed cell of each day's deposit.

4. Sufficient standby equipment should be provided to prevent delay in covering, due to breakdown or peak loads.

5. Waste building material, concrete, or other bulky waste material which may furnish rat harborage should not be used for the final surface or side slopes, but should be promptly incorporated within the fill.

6. The final covering for surface and side slopes should be maintained at a depth of approximately twenty-four inches.

7. In case the finished fill has a boundary side slope, the toe of the slope should terminate in a sand and gravel-filled ditch. This will prevent raveling of the toe with exposure of some of the waste material, will prevent the burrowing of rodents, and finally will obviate puddles by permitting seepage from the fill to be absorbed into the ground.

8. Spraying of the exposed waste material and adjacent surfaces should be resorted to when necessary to allay dust.

9. As a rule, the layer of refuse should not exceed an average depth of about eight feet after compacting. Where deeper fills are necessary the filling should be carried on in stages.

10. Control over the blowing of papers should be adequately maintained by the use of movable snow fencing.

11. While the maintenance of proper earth covering as herein before recommended will to a large extent prevent fires, water under pressure should be available for fire fighting purposes. If scavengers are tolerated they should be adequately supervised.

12. All collections of surface water resulting from these landfill operations should be drained, filled, or treated with effective chemicals so as to prevent mosquito production or allay odors.

13. Where necessary, effective steps should be taken to prevent floatage of waste material into open water.

14. Inspection for and control of rodents should be maintained until the fills are stabilized.

15. After the active period of filling operation is completed a maintenance program should be continued until the fill has become stabilized so as to insure prompt repair of cracks, depressions, and erosion of the surface and side slopes.

16. Studies of the varied problems involved in landfill operations should be continued and should include researches into the biologic, chemical and physical activities, as well as the engineering, economic, and administrative aspects.

A. N. B.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1941		
	June	July	Estimated Expectancy July
Typhoid	8	28	82
Typhus	19	25	46
Malaria	399	433	952
Smallpox	1	0	1
Measles	510	162	115
Scarlet fever	30	31	42
Whooping cough	169	89	169
Diphtheria	21	11	46
Influenza	38	11	28
Mumps	101	31	49
Poliomyelitis	14	162	9
Encephalitis	0	3	3
Chickenpox	39	15	13
Tetanus	2	4	7
Tuberculosis	269	244	298
Pellagra	32	22	60
Meningitis	3	9	6
Pneumonia	147	89	67
Ophthalmia neonatorum	0	0	2
Trachoma	0	0	0
Tularemia	2	1	1
Undulant fever	4	4	6
Dengue	0	0	0
Amebic dysentery	0	1	0
Cancer	147	148	0
Rabies—Human cases	0	0	0
Positive animal heads	18	18	---

	July	Aug.	Aug.
Typhoid	28	33	79
Typhus	25	44	70
Malaria	433	892	1047
Smallpox	0	0	1
Measles	162	50	29
Scarlet fever	31	62	45
Whooping cough	89	77	99
Diphtheria	11	57	90
Influenza	11	39	24
Mumps	31	21	28
Poliomyelitis	162	353	9
Encephalitis	3	0	2
Chickenpox	15	5	6
Tetanus	4	4	5
Tuberculosis	244	262	267
Pellagra	22	10	29
Meningitis	9	4	4
Pneumonia	89	82	59
Ophthalmia neonatorum	0	4	1
Trachoma	0	0	0
Tularemia	1	2	0
Undulant fever	4	4	8
Dengue	0	1	0
Amebic dysentery	1	2	0
Cancer	148	167	0
Rabies—Human cases	0	0	0
Positive animal heads	18	14	---

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

Woman's Auxiliary

Mrs. F. C. Smith, Chairman
Press and Publicity Committee

The Auxiliary to the State Medical Association is glad of the opportunity to speak to all doctors' wives through the Alabama Medical Journal. Our organization is anxious to make not only the doctors but the doctors' wives themselves realize what a potential force our organization could be if we

had every county organized to its full strength.

There is a real need for such an organization as ours. There is no group of women so closely allied in interests, aims, and common understanding as doctors' wives. United strongly together we could be a potent and vital aid not only to our respective husbands but to the health and welfare of our communities and to the State as a whole, not to mention the pleasure of associating with so many others of mutual interests. There is no other organization that can create the good-will and foster such a cooperative spirit among our doctor-husbands as we, their wives, can do.

The State Auxiliary plans to organize several new county auxiliaries the coming year. We trust that we shall have the cooperation and well wishes of the doctors of the various county medical societies, and we would appreciate them taking the Journal home and calling their wives' attention to the hopes and aims of the State Medical Auxiliary.—By Mrs. O. R. Grimes, *Chairman of Organization*.

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

The third annual postgraduate seminar of the Jefferson County Medical Society was held in Birmingham, September 15 and 16. Those contributing to the program were Dr. F. H. Falls, Professor of Obstetrics and Gynecology, University of Chicago; Dr. Cyril M. MacBride, Assistant Professor of Medicine, Washington University School of Medicine; Dr. E. G. Wakefield, Assistant Professor of Medicine, University of Minnesota; Dr. Foster Kennedy, Professor of Clinical Neurology, Cornell University; Dr. I. A. Bigger, Professor of Surgery, Medical College of Virginia; and Dr. Joseph Stokes, Jr., Professor of Pediatrics, University of Pennsylvania.

* * *

The sixteenth annual meeting of the Alabama Pediatric Society, held in Birmingham, September 17, included in its program a symposium on problems of the newborn, with Drs. J. Sam Smith, Montgomery, J. H.

Baumhauer, Mobile, J. W. Britton, Anniston, and James R. Garber, Birmingham, participating. The guest speaker was Dr. Joseph Stokes, Jr., of Philadelphia. Others contributing to the program were Drs. Ruth Berrey, C. L. Lamar, F. C. Wilson, Stewart Welch and J. W. Simpson—all of Birmingham.

* * *

Duke University School of Medicine and Duke Hospital announce a symposium on problems of civil and military emergencies on October 16, 17 and 18 in the Page Auditorium on the West Duke Campus, Durham, N. C. A program presented by nationally known authorities on their subjects has been arranged.

* * *

Meeting of the Southeastern Division of the Association held recently in Troy under the vice-presidency of Dr. J. S. Tillman was addressed by Drs. B. F. Austin and D. G. Gill, Montgomery; Robert Beard, Troy; Gilbert Douglas, Birmingham; Clarence Bennett, Eufaula, and G. O. Segrest, Mobile.

* * *

The fourth annual forum on allergy will be held in Detroit on January 10 and 11, 1942.

* * *

The American College of Physicians announces its twenty-sixth annual session to be held in St. Paul, Minn., April 20-24, 1942. Dr. Roger I. Lee of Boston is president of the College and will be in charge of the program of general sessions and lectures.

* * *

The Southern Medical Association meeting will be held in St. Louis on Monday afternoon, Tuesday, Wednesday and Thursday, November 10-11-12-13.

The Association will open at noon on Monday, the registration beginning at that time, the scientific programs beginning at 2:00 P. M. and continuing through Tuesday, Wednesday and Thursday, all Association activities being concluded in the late afternoon of Thursday. The registration, scientific and technical exhibits, all clinical sessions, all sections and all conjoint meetings will be held at the Municipal Auditorium.

The general session, open to the public, will be held on Monday evening; the general session for the address of welcome, the president's address and the Report of the Council, followed by the president's reception and

ball, will be on Tuesday evening; and the alumni reunion dinners will be on Wednesday evening, all these evening activities to be held at the Jefferson Hotel.

* * *

The forty-sixth annual meeting of the American Academy of Ophthalmology and Otolaryngology will be held at the Palmer House, Chicago, October 19-23, under the presidency of Dr. Frank R. Spencer, Boulder, Col.

The academy's program consists of one general scientific meeting on the morning of the first day, separate programs for the two specialties on alternate afternoons and instructional courses every morning beginning on Tuesday.

* * *

Among the many medical meetings of this year, one of the most timely and interesting is that of The Association of Military Surgeons of the United States to be held Oct. 29th-Nov. 1st at the Brown Hotel, Louisville, Ky.

All members of the medical profession are invited to attend as guests and it is particularly hoped that as many members of the Medical Defense Committees as possible will come.

War medicine and surgery has changed considerably since the previous emergency. Mechanization of armies and air bombardments have created new and difficult problems in traumatic surgery and methods of treatments of wounds and extreme abrasions.

For every member of the profession who can be present at this meeting there will be something of special interest.

The session concludes with a mass review of military medicine and an inspection of Fort Knox.

* * *

The Second American Congress on Obstetrics and Gynecology will be held in St. Louis, Missouri, April 6 to 10, 1942. All of the meetings and both the commercial and educational and scientific exhibits will be held in the Public Auditorium.

The general plan for the program will be much the same as that of the first congress, which was held in Cleveland, September 11-15, 1939, with sectional meetings for the various groups (nurses, public health, administrators, educators and physicians), general

sessions for all members attending the congress and round tables. There will be evening sessions open to the general public.

* * *

Under the auspices of the American Association of Industrial Physicians and Surgeons the American Conference on Industrial Health will hold its second annual meeting on November 5 and 6, 1941, at Chicago Towers, Chicago, Illinois. This organization maintains a public forum for all who are interested in the prevention of disease, injury and disability in industry, and the active supervision and promotion of health in industrial groups.

The opening session will be a symposium on the technical problems of industrial health on the basis that health supervision in industry involves two great principles: (1) the adjustment of the working environment to the employee; and (2) the adjustment of the employee to the working environment, including also the human environment. The technical problems are the result of the application of these principles, and run the whole gamut of public health as applied to industry.

The afternoon session will be a symposium on the economics of industrial health, including (1) organization and cost of a health service, and (2) discussion on the value of industrial health service to the employer, the employee and the public.

The morning of the second day will be given over to a symposium on the social implications of industrial health, discussing how far an industrial health service should go; are hospital and medical care plans related to industrial health service in any practical way; does legislation play a part in this problem; and the evaluation of labor turnover, spoilage, and lack of trained men, together with the experiences of management and the interests of insurance carriers in the medical and social problems presented.

The sessions will close with a schedule of plant medical department inspections, by special arrangements with local industries.

* * *

The American Association for the Study of Goiter again offers the Van Meter Prize Award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The

award will be made at the annual meeting of the Association which will be held at Atlanta, Georgia, June 1st, 2nd, and 3rd, 1942, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a type-written, double spaced copy sent to the Corresponding Secretary, Dr. T. C. Davison, 478 Peachtree Street, Atlanta, Georgia, not later than April 1st, 1942.

The committee which will review the manuscripts is composed of men well qualified to judge the merits of the competing essays. Dr. Asher Chapman of Rochester, Minnesota, received the award for the year 1941 in recognition of his essay entitled "The Relationship of the Thyroid and the Pituitary Glands to Iodine Metabolism and Extrathyroid Iodine Metabolism."

A place will be reserved on the program of the annual meeting for presentation of the prize award essay by the author if it is possible for him to attend. The essay will be published in the annual proceedings of the Association. This will not prevent its further publication, however, in any journal selected by the author.

* * *

The American Board of Obstetrics and Gynecology announces that the next written examination and review of case histories (Part I) for Group B candidates will be held in various cities of the United States and Canada on Saturday, January 3, 1942, at 2:00 P. M. Candidates who successfully complete the Part I examinations proceed automatically to the Part II examinations later in the year.

Applications for admission to Group B, Part I, examinations must be on file in the Secretary's office not later than October 1, 1941. Applications for Group A must be in the Secretary's office by March 1, 1942.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting at Atlantic City, N. J. immediately prior to the 1942 meeting of the American Medical Association.

As previously announced in the Board booklet, this fiscal year (1941-1942) of the Board marks the close of the two groups of

classification of applicants for examination. Thereafter, the Board will have only one classification of candidates, and all will be required to take the Part I examinations.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pa.

Book Abstracts and Reviews

A Textbook of Ophthalmology. By Sanford R. Gifford, M. A., M. D. Professor of Ophthalmology, Northwestern University Medical School, Chicago; Attending Ophthalmologist, Passavant Memorial and Cook County Hospitals. Second edition. Cloth. Price, \$4.00. Pp. 470. Philadelphia: W. B. Saunders Company, 1941.

This book brings to the general practitioner, as well as the specialist in this field, one of the most complete, abridged editions on the subject of ophthalmology. It far surpasses the popular revised editions of May's Ophthalmology in completeness of subject matter, beautiful colored plates, and as a reference book on eye diseases. The book carries out a plan of presentation similar to course instruction with lectures as may be presented to any medical school group or post-graduate class with adequate excellent diagrams and plates.

The opening paragraphs describe in detailed exactness, with accompanying illustrations, the procedures for examination of the eye. Methods of employment of the essential eye equipment are well presented. The various diseases and conditions of the eye are then discussed in a very learned, brief, clear manner—using the time honored routine of etiology, symptomatology, clinical pictures, diagnosis and treatment.

Throughout the text emphasis is placed on the multitude of general diseases becoming manifest in the eyes and its adnexa. It contrasts the signs of a general disease as arteriosclerosis or arteri-
ol sclerosis with the lesions found in the eye at the different stages of the disease. It reveals that diagnosis can often be made or confirmed by accurate fundiscopic observations of many generalized diseases. Likewise, diabetes, the anemias, degenerative processes, syphilis, etc., show specific ocular pictures along with the general signs of the disease.

There is a chapter on refraction. Concise as it may be, it certainly is most complete for it gives a review of the essentials of physiologic optics, methods of refraction, and a personal, but well standardized, routine for the treatment of refractive errors. As should be expected, the majority of the text is devoted to truly ocular diseases or conditions such as glaucoma, iritis, scleritis, corneal abnormalities, cataract, ocular muscle conditions, and hereditary and traumatic ocular lesions.

Of interest are the new forms of treatment mentioned, such as heparin used to promote resolution of the thrombus in central retinal venous thrombosis; and the use of riboflavin in the treatment of acne rosacea affections of the cornea.

New surgical procedures are even described in such detail as to need no reference to the original articles. The appendix contains a most important summary of appraisals of loss of visual efficiency, and a standard method of determining such losses approved by the House of Delegates of the American Medical Association.

In conclusion, this textbook offers a most enjoyable reference text on ophthalmic subjects—about the best compact edition to be obtained today. The author has compiled his data conclusively and presented them in a pleasing and easy-to-read manner. All points of controversy are not given vent, but to avoid confusion a definite opinion is expressed and no one can contest Dr. Sanford Gifford's ability, knowledge of the subject, and the place he holds in ophthalmology to give nothing but a fair, true, exact picture to his readers.

K. B. B.

Collected Papers of The Mayo Clinic and The Mayo Foundation. Edited by Richard M. Hewitt, B. A., M. A., M. D.; Harry L. Day, Ph. B., M. D.; James R. Eckman, A. B.; A. B. Nevling, M. D.; John R. Miner, B. A., Sc. D.; and M Katharine Smith, B. A. Volume XXXII, 1940. Cloth. Price, \$11.50. Pp. 1190, with 210 illustrations. Philadelphia and London: W. B. Saunders Company, 1941.

The new Mayo Clinic volume includes papers published from the Clinic during the year beginning December 1939 and ending November 30, 1940. Though many papers are mentioned only by title, the number reprinted and abstracted fill 1123 pages. In the chapter on Military Medicine there are several articles from sources other than The Mayo Clinic, but this is the only material which did not originate from the Clinic. The editors felt that at this time they should depart from their usual custom and include in the section on Military Medicine all available material in order that the reader might become familiar with the newest advances in this field of medicine.

The section on Military Medicine includes articles on the effect of altitude on the human body, emergency oxygen units for parachute escape, treatment of shock, treatment of injuries to the skull, face, chest, abdomen, knee and spine, treatment of burns, and control of hemorrhage.

The value of the gastroscope is brought out in several articles dealing with diseases of the stomach, and the necessity for early diagnosis of carcinoma of the stomach is emphasized. In a chapter dealing with intra-abdominal hernia many rare and interesting types of hernia are described. An article dealing with hypertension describes both medical and surgical therapy, evaluating the results of both forms of treatment. There is a very excellent article dealing with the subject of the treatment of heart diseases, and a very practical article on the treatment of common skin disorders. There is an excellent summary of the present status of our knowledge of gout and one dealing with the differential diagnosis of the different hemorrhagic diseases.

The Mayo Clinic volume always contains not only original articles but summaries of new developments in the field of medicine and surgery.

One is impressed with the fact that year after year such a large volume of articles can appear from any single institution. Though the Mayo's themselves are gone, their capacity for organization and their ability to pick men of promise and to inspire them with a true spirit of research perpetuates their memory and stands as a witness to their genius.

C. K. W.

Science and Seizures: New Light on Epilepsy and Migraine. By William G. Lennox, M. D. Cloth. Price, \$2.00. Pp. 258. New York: Harper and Brothers, 1941.

Dr. Lennox wrote this splendid book in response to the need of both physicians and laymen for authentic up-to-date knowledge about epilepsy. Dr. Lennox, internationally known for his work on epilepsy and migraine, has long been a proponent of greater professional and lay cooperation. He is president of the "Physicians' International League Against Epilepsy" and vice-president of the American "Layman's League Against Epilepsy."

In simple language, the story of epilepsy is unfolded. Here is presented knowledge for the physician that could only be gained by the reading of many books and periodicals. The essence is here. Part 1, devoted to Convulsive Seizures, boldly attacks superstitions and ignorance. Dr. Lennox, step by step, relentlessly throws the light of science in all the reaches of this limbo of medicine. Beginning with the chapter "Orienting Facts," Dr. Lennox proceeds to describe systematically the aura, types of seizures, borderline conditions, and the latest facts and theories on causation. Facts from an analysis of 2500 medical histories are plainly presented. There is a masterful interpretation of information gained from many years of research on brain chemistry and brain waves (electroencephalogram).

A chapter, "The Threat to Life and Intellect," refutes the idea of epileptic personality, shows the relative infrequency of intellectual deterioration and cites famous epileptics. Other chapters discuss the importance of prevention, eugenics and the problem of heredity and marriage.

The chapters on treatment are outstanding. Dr. Lennox says: "Like a chief of staff who disposes his battle avenues the physician plans his advance along various fronts. Against epilepsy the three main fronts may be labelled psychological-social, physical, and pharmacological." Under psychological-social is discussed the maintenance of morale, healthy attitudes, education, work—things of tremendous importance to the epileptic, and this chapter will be of great help to the patient and his family. The "Physical Front" discusses the importance of good health, activity, rest, diet and bowels, the ketogenic diet, dehydration and operations on the brain and body.

In the "Pharmacological Front" are discussed principles and precautions in medication, including dilantin, drug habit, dosage and costs. The quack, osteopath, and patent medicine exploiter receive well deserved condemnation.

Part Two deals with headache seizures, migraine, and discusses similarity and differences

between it and epilepsy. Again physical, psychological and pharmacological aspects are discussed. The use and value of ergotamine tartrate are discussed. There is a brief but well selected bibliography and an excellent index.

Dr. Lennox most certainly has succeeded in his purpose of writing a book for physician and layman. There is invaluable information for the physician and supplementing, not supplanting, his treatment and aid in gaining the cooperation of the patient. The book is recommended without reserve to physicians, patients, nurses and others who want the facts.

A. M. G.

Handbook of Communicable Diseases. By Franklin H. Top, A. B., M. D., M. P. H.; Director, Division of Communicable Diseases and Epidemiology, Herman Kiefer Hospital and Detroit Department of Health; Associate Professor of Preventive Medicine and Public Health, Wayne University College of Medicine; Special Lecturer in Communicable Diseases and Epidemiology, University of Michigan; Major, Medical Reserve Corps, United States Army; and collaborators. Cloth. Price, \$7.50. Pp. 682, with 73 illustrations and 10 color plates. St. Louis: The C. V. Mosby Company, 1941.

There has been a need for a ready reference book on communicable diseases and this publication of Top and his associates does much to fill the void.

The book is almost too inclusive in that it covers some of the rare infections as well as the more common ones. The diseases with which the author has had most experience have been handled best and are authoritative. Not all would agree, however, with the recommended 60-day quinine treatment of malaria.

The nursing aspects of communicable diseases are important and are given unusual prominence in this book. In addition to the usual description of each disease, there is included a section on nursing care for that disease while there are also chapters devoted to the management of communicable disease in the home and hospital.

As a handbook the material is concise and covers the essential matter.

D. G. G.

Uterine Inertia—The best treatment for uterine inertia consists of patience plus sedation and efforts to maintain proper water balance and nourishment. The first is undoubtedly the hardest to acquire and yet it should be remembered that prolongation of parturition in itself rarely leads to any serious harm, whereas operative intervention before the cervix is completely dilated definitely increases the risk to mother and child. Morphine in doses of 1/6 to 1/3 grain repeated as indicated to encourage rest, is probably the best sedative drug. At this dosage morphine not only tends to increase uterine tone but also strengthens the individual contractions.—*Plass, Texas State J. Med.*, Sept. '41.

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COMMON DUCT STONES AND THEIR TREATMENT*

By

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The wide occurrence of gallbladder disease in people of middle age is understood by all physicians. Autopsy observations make it appear to be a most frequent disorder. Hektoen and Riesman found stones in 25 per cent of cadavers coming to autopsy after the sixteenth year. Mentzer in 633 consecutive necropsies at the Mayo Clinic found that 67 per cent of adults had stones. Crump in 1,000 routine consecutive postmortem examinations found stones in 32.5 per cent. The fact that these people with gallbladder dysfunction are in the most useful period of life when the disability manifests itself challenges us to evolve the safest, most effective treatment for the condition. The medical and surgical treatment has been far from satisfactory, and recent discoveries that throw some light on the situation are of commanding interest.

This article is concerned with the incidence, diagnostic features, and treatment of stones in the common and hepatic ducts, there being a gradual realization that the explanation of the poor results of gallbladder operations is to be found in overlooked stones that remain to cause recurrent symptoms after the gallbladder has been removed. In a smaller degree, duct stones have remained to cause symptoms even after the ducts have been explored and drained in addition to cholecystectomy. Jung found 16.4 per cent of stones left postoperatively in his necropsy material. Bernhard, reporting results of 750 choledochostomies

followed at Giessen Clinic, found "at least 5 per cent of stones overlooked in the choledochus." William Mayo stated that "in nearly one-third of the deaths following operation for common duct stones in our series, postmortem revealed that all stones had not been removed." Crump found calculi in the ducts in 24 per cent of all gallbladder disease with stones in 1,000 consecutive necropsies. These were located in the hepatic ducts in 28 per cent of the cases; common duct, 30 per cent; papilla of Vater, 60 per cent; and cystic duct, 48.7 per cent. The presence of multiple stones, of course, explains the totality of the above percentages.

The operative recovery of stones reported does not approach the autopsy incidence even where the ducts are explored most frequently. Lahey reports 18.9 per cent recovered duct stones in gallbladder operations in 1935, when 44 per cent of ducts were explored, and 21 per cent in 1932-1933 and 1930-1931. These are the highest percentages from this clinic's statistics for the years 1910 to 1935 and the highest recoveries reported in the literature. Allen reports 14 per cent in 1934 and 14.6 per cent in 1933 in biliary tract operations at the Massachusetts General Hospital. Judd and Marshall recovered duct stones in 13.2 per cent of all the biliary tract operations in statistics reported in 1931. The wide disparity between stones discovered surgically and the 24 per cent incidence of a large series of consecutive autopsies would appear to show a failure of treatment in even the best clinics in the recent past. However, the fact that bile ducts frequently harbor stones and must be explored in about half the operations on the biliary tract is being realized more and more. Stones in the common duct have been recovered and reported in ages from five to dotage.

*Read before a meeting of the Northwestern Division of the Association, held at Moulton, June 26, 1941.

The signs and symptoms of duct stones most commonly found are pain, jaundice, persisting or recurrent symptoms after biliary surgery, chills and fever following upper abdominal pain, and severe nausea and vomiting accompanied by typical pain. The operative findings are, first, palpable stone; second, dilated common duct; third, dilated cystic duct; fourth, small stones in the gallbladder; fifth, contracted gallbladder; sixth, gallbladder without stones; seventh, thickened head of the pancreas; and eighth, cholangitis.

Considering first the preoperative symptoms and signs, colicky pains are the most common. Judd reports their presence in 80 per cent of the histories of 1,608 patients. Lahey also reports 80 per cent right upper quadrant pain in a series of 221 cases. The pain is severe and usually requires morphine for relief. It is intermittent and may be epigastric instead of in the right upper quadrant; and may be dull, boring, or described as an ache rather than the usual colic. It is often referred to the back but not necessarily so. There is some tendency for it to be nocturnal in people who eat their main meal in the evening. In about 20 per cent of cases, pain is absent entirely.

Jaundice is present in 61 per cent (Lahey) to 73.4 per cent (Judd) of examinations or histories. It is of a fluctuating depth and less intense than the steadily deepening jaundice of malignant or cicatricial obstruction, which, without fluctuation in degree, eventuates in a deeply bronzed or greenish color. Liver damage accompanies these cases and makes waiting hazardous, and the tendency to operate and explore as soon as the patient can be made ready has become the usual procedure. The jaundice of cholangitis is about midway between the fluctuating color caused by a duct stone and the persistent deepening type in malignancy of the pancreas or the papilla.

Laboratory studies are of some value, particularly in ascertaining whether jaundice is obstructive or hemolytic in type, but they cannot be more than suggestive or confirmatory in the differential diagnosis of obstruction. It is important to know whether or not any bile is entering the duodenum, and duodenal drainage with a nasal tube tells us that. The microscopic examination of bile recovered may show calcium, bilirubin or cholesterol crystals, which are strong evi-

dences of duct calculi. Wilkinson has stated that duodenal drainage offers the only available method of establishing a diagnosis in cases where the gallbladder has been previously removed. However valuable the sign of jaundice may be, it is actually a somewhat late observation and its presence testifies to a degree of liver damage and disordered blood coagulation mechanism. These factors are bound to be reflected in the surgical mortality rate.

As a subdivision under jaundice, a sign that has been fairly frequent and when present becomes almost pathognomonic for duct calculus should be described. It has not been mentioned in the literature often although it seems unbelievable that it has not been observed oftener. It is the transient appearance of bile in the urine without visible jaundice. The urine is orange or coffee colored and gives the usual evidence of bile pigment when shaken into a foam. This sign is apt to be present in one voiding and absent in the next, or it may persist for several hours. It precedes clinical jaundice by days or weeks and for that reason is valuable in enabling one to make a diagnosis before liver damage is done. It must be sought for routinely in all cases of upper abdominal discomfort and patients must be instructed to look for it. If found, a specimen of the suspected urine should be collected for examination. Sometimes it is made evident to the patient by a urine stain on the underwear. The value of this sign lies in the fact that it is earlier than jaundice and also more specific. A fairly large amount of bile absorption must occur before jaundice is apparent, whereas a short blockade of the common duct by a stone, which shifts its position perhaps and by so doing completely blocks the duct, is immediately followed by distention of the biliary tree, with absorption of pigment by the liver parenchyma and from the liver by the blood serum which carries it to the kidneys for elimination. This occurs in a matter of an hour or two, during which time the patient is experiencing the other symptoms of common duct obstruction; of pain, nausea, and vomiting in greater or less degree. The whole process may abruptly cease by the moving of the stone or a slight turning of it that enables the bile to pass again and escape from the papilla into the duodenum. Perhaps these movements are initiated by peristalsis and anti-

peristalsis in the gastrointestinal tract. If the duration of the blockade is short, the reverse process soon begins to rid the serum of bile pigments, and visible jaundice does not occur in the conjunctiva or skin. It is the same process that, with a larger stone more completely held by the duct, continues until the usual fluctuating jaundice of stone obstruction eventuates. It seems probable that small stones or crystals originating in the gallbladder or hepatic ducts float about in the common duct bile with a gradual accretion of new crystals adding to their volume. When a size sufficient to block the biliary current has been reached, the above sequence takes place. The stones recovered from the ducts in such cases have invariably been small and soft, which makes one feel that they are of fairly recent construction.

It seems obvious, therefore, that an earlier sign than jaundice should be valuable to the surgeon in enabling him to make an earlier diagnosis and to remove the obstructing calculus before serious injury to the liver has occurred. When early treatment is possible, the mortality rate may be expected to decline, and residual liver damage will be reduced to a minimum. Furthermore, a larger number of common duct stones that have been previously overlooked should be discovered. It is interesting to consider the large percentage of duct stones that have been recovered in cases where the history is negative for jaundice and in clinics where explorations have been routinely done. It would seem likely that many of these cases never jaundiced should have presented this sign. This sequence can conceivably be produced only by small stones, mucus plugs or blood clots, or small parasites. A fragment of neoplasm would probably be overshadowed by the pressure of the parent growth on the duct or liver radicles. In the diagnosis of duct stones, we should rely more on this sign and open common ducts at operation when it is present. Fewer stones would then be left.

Persistent and recurring symptoms after gallbladder surgery suggest overlooked stones. This is true even where ducts have been explored at the original operation, for there is no guarantee at present that no stone remains. Where cholecystectomy or cholecystostomy alone was the initial procedure, the persisting symptoms, especially when jaundice is one of them, make duct ob-

struction from stone, angulation or edema and inflammation about the terminal portion most likely. Cholangiography should help us avoid this situation where the duct has been explored. Enough cases have been reported by Best and others to make it seem probable that small stones frequently lurk in the intrahepatic ducts where they cannot be reached by our present technic, and later these stones are washed down into the larger ducts by the current of the bile.

Chills and fever are present in a fair number of common duct stones. Judd reports 37 per cent in his series. Zollinger reports a 15 per cent incidence in 100 cases. Lahey had only a 4.2 per cent occurrence. This is a symptom associated with long standing disease of the ducts and seldom occurs where explorations are frequently done.

Nausea and spontaneous vomiting occur often in common duct stones. When associated with upper abdominal colic, it is suggestive of duct distention. Zollinger found that a collapsible balloon inserted in the common duct under light anesthesia and inflated later would cause nausea and vomiting, whereas distention of the gallbladder did not. Frequently it is an early symptom, although it also appears when the ducts are inflamed or when the duodenum is irritated. He found an incidence of 89 per cent involuntary vomiting in common duct stones in 100 cases at the Peter Bent Brigham Hospital. However, it was present in 85 per cent of acute cholecystitis and was believed to be due to cystic duct obstruction commonly accompanying it.

In addition to the preoperative signs and symptoms, certain findings at operation suggest the presence of duct calculi. Of course, a palpable stone or stones in the duct necessitate exploration. Palpation is valuable if the findings are positive, but it is well known that stones in the pancreatic portion of the duct are often impossible to feel, particularly when the pancreas is indurated. The best method of palpation is done from the left side of the patient with the operator facing the head of the table. The left hand is inserted with the fingers beneath the hepaticoduodenal fold and the thumb on the top of it. By slipping the thumb over the course of the duct, the structure can be followed to the pancreas. However, if the findings are negative but the common and cystic ducts are dilated, the supposition is that they

dilated because of the presence or passage of a stone or from back pressure in the system above the sphincter of Oddi. On the other hand, a fibrosed, contracted duct is the result of old inflammatory changes usually associated with the formation and passage of calculi.

A dilated common duct makes exploration mandatory. In cases not previously operated upon, the dilatation is caused by a stone in the terminal portion, or by inflammatory or neoplastic change in the head of the pancreas, or rarely by a spasm of the sphincter or by carcinoma originating in the duct itself. In secondary operations, inflammatory reaction or scar tissue may angulate the duct and cause it to dilate.

The presence of small stones in the gallbladder arouses suspicion of duct stones because of the greater ease with which they may be extruded. Also the concomitant formation in the ducts appears to be possible.

A small contracted gallbladder with or without stones suggests the necessity of duct exploration. It is the evidence of an old process which is apt to extend to the ducts as time passes. The contracted miniature is the end result of an organ once large and infected, with small stones probably expressed into ducts or more often remaining in its quiet interior.

The presence of an indurated pancreas that has not the hardness of a neoplasm brings up the question of a stone at the ampulla with biliary reflux into the pancreatic duct. This necessitates exploration.

Cholangitis with an irregular thickening of the duct demands a search and a cleaning of the duct stones and débris. In advanced cases the contractures may make probing hazardous or impossible, and the judgment of the surgeon may be taxed to the utmost to decide whether retrograde dilatation should be done or an anastomosing operation attempted.

Finally, if the bile, aspirated with syringe from the common duct, is cloudy and contains flocculent material, the duct should be explored.

The treatment of common duct stones is entirely surgical, and an operation is best done as soon as a diagnosis is made and a brief period of supportive therapy has been completed. This is much less extensive if no jaundice is present than would be required in a case that is frankly jaundiced,

and it can be finished in two or three days. The usual procedure is to have the patient placed on a high carbohydrate diet with plentiful fluids, and one or two intravenous clyses of 1,000 cubic centimeters of 5 per cent glucose are given daily. In many, a tonic dose of digitalis may be of value and certainly does no harm during the preoperative period. During this interval, kidney function should be estimated, and blood studies should be done, including prothrombin level and bleeding and coagulation time, especially in those patients who are jaundiced or have an increase in the icterus index. Bile salts and transfusions will bring the clotting process within safe limits in these people and will eliminate the hazards of prothrombin deficiencies. A definite rule for postponement has been the presence of respiratory infection of even moderate acuteness. The great tendency for shallow respiration in people with upper abdominal incisions seems to invite respiratory infections and a large incidence of right lower lobe lesions complicates operative measures on the biliary tract. Coughing postoperatively is extremely uncomfortable and is apt to favor the incisional hernia occurring so frequently in right upper quadrant incisions. The anesthetic is a matter of choice by the surgeon—ether and avertin.

The high right rectus incision gives good exposure of the gallbladder and common duct. It must be long and laterally to the midline.

The gallbladder is now identified and palpated, and the liver, pancreas, duodenum and stomach examined. The gallbladder is grasped and the liver delivered downward. Careful traction on the gallbladder now brings it closer to the incision and adhesions to the duodenum are dissected away. The intestine is displaced to the left with one or two large packs and a broad Deaver retractor placed to hold it there. A second Kelly is placed farther along the fundus and traction causes the cystic duct and the hepaticoduodenal fold to stand out prominently. The gallbladder is now carefully palpated and examined, and, if it is too tense to stand traction safely, it may be aspirated at this time. While maintaining some traction on the lower clamp with the left hand, the fatty and areolar tissue about the cystic and common ducts is bluntly dissected with a hemostat and gauze until the duct can be visual-

ized. At this point the operator may change to the left side of the table to palpate the common duct between the fingers and thumb of the left hand. It is necessary to say that the relationship of the common duct, portal vein, and hepatic artery is sometimes anomalous and that blind incision or clamping in this area may be disastrous. The cystic and common ducts must be plainly seen and their relationship identified. Usually some fine blood vessels are torn in the areolar tissue of the hepaticoduodenal fold while acquiring exposure of the common duct, and they require ligation to avoid persistent oozing. A Luer syringe with a 20-gauge needle is now introduced, and the common duct is aspirated. Deaver and Lahey have called attention to the necessity of needle aspiration in every case in order to avoid the tragedy of incising an overlying portal vein, which occasionally is found in front instead of behind the duct. Also, the information gained by holding the bile-filled syringe to the light is very helpful in deciding whether or not the duct should be incised. When stones are present the bile shows flakes and cloudy material, which are normally absent. If it is decided not to explore the duct, the needle hole will close with very little leakage.

If the duct is to be explored, it is now grasped with two Allison forceps, and a longitudinal incision one centimeter in length is made with a sharp bistoury. It is well to make this at least slightly distal to the junction with the cystic duct for convenience in exploring the ampulla of Vater. A suction tip removes the bile as it escapes from the incision and duct forceps are carefully introduced first toward the ampulla. If an obstruction is reached, the greatest care should be exercised in attempting to get by it, for a false passage may be made if any force is used. When stones are felt, the forceps are partly closed and withdrawn. Scoops may then be introduced, and if the operator returns to the left side of the table the scoop can be manipulated with the right hand, while the left, with the finger below and the thumb above the duct, guides it and milks the stone into the concavity of the instrument. Sometimes a curved Kelly clamp follows the course of the duct more easily than any other instrument and is extremely useful for bringing forth small stones. When the distal portion of the duct appears to be

clean, the hepatic ducts are explored in the same manner. The sphincter of Oddi is now dilated with graduated dilators. This is a most important maneuver since it makes it possible for an overlooked stone (or stones that may subsequently wash down from the intrahepatic ducts) to be passed into the duodenum. There is a characteristic sensation felt when the olive-shaped dilator slips through the sphincter. It jumps forward as the tip slides through the papilla into the duodenum. Then the dilator is gently withdrawn and a larger size substituted. This is repeated until the sphincter has been dilated to duct size (about 10 mm.). The dilatation should be done with the possibility in mind of making a false passage, as Allen has pointed out. If obstruction fails to give way to gentle pressure of the instrument, it is safer to open the duodenum and perform a retrograde dilatation or a choledo-duodenostomy. It is believed that reflux of duodenal contents through the stretched orifice is rare, occurring only when there is some duodenal obstruction causing antiperistalsis. These objections are outweighed by the ever-present possibility of leaving a stone behind to cause recurrent symptoms. Crump's necropsy findings of 28 per cent hepatic duct location in stone cases must be remembered. There is no way at present to avoid an occasional instance of this, and therefore it seems most important to leave a means of exit into the duodenum. Best has reported a case with negative cholangiogram at six days but with persistent sinus draining bile. Ten weeks later a second cholangiogram showed two stones in the common duct. After two months of nonoperative management, a cholangiogram showed the absence of stones and the T-tube was removed, and uneventful convalescence ensued. It seems probable that undiscovered stones come principally from two areas, the pancreatic portion and the hepatic ducts. The latter apparently are washed down into the common duct when the bile current is reestablished after the common duct has been cleaned of impediment. As has been repeatedly stated, the stone in the pancreatic portion is frequently overlooked. The inflammatory reaction about it may cause the surgeon who palpates it to believe he is dealing with a malignancy. Even when the duct is carefully probed and scooped, flushed out, and suction used, a stone may be passed by

unnoted. With the sphincter dilated, it is probable that the exceedingly dangerous and difficult secondary operation may be avoided and the stone passed by nonoperative measures.

A T-tube with the short arms cut to 1½ centimeters can now be inserted in the duct without difficulty. It seems unnecessary to have the arms longer than that, as it will remain *in situ* indefinitely with reasonable care in avoiding traction on the long arm. It is certainly more securely placed than a catheter and is no more difficult to insert. It has the advantage of not obstructing the duct lumen when the long arm is clamped to force the bile into the duodenum. It is held in place by a fine chromatic interrupted suture through the incised edges of the duct on either side of the long arm. One or two sutures are used to draw the areolar tissue of the hepaticoduodenal fold over the exposed portion of the duct.

The gallbladder is now removed either from below upward, or, better, from above downward since, in the latter, the common duct is less likely to be cut, leaving, as you do this, enough of the peritoneal coat to cover the raw liver area when approximated with a running stitch. The gallbladder is emptied and drained in cases where an anastomosis between gallbladder and stomach or duodenum is indicated or where the patient's condition or age makes further operative procedure hazardous. In such cases, the immediate goal has been achieved by removing the duct obstruction; cholecystectomy may be deferred until the patient's condition permits. In very elderly people the life expectancy may be too short for the formation of added stones. A very small catheter will be satisfactory for drainage of the gallbladder, and it could probably be dispensed with and the opening closed tight when a drain is already in the common duct. The gallbladder catheter drains scarcely at all and aside from the decompressing effect seems to be quite superfluous. A cigarette drain is placed in the foramen of Winslow and a stab wound made laterally beneath the twelfth rib through which both drains emerge. The omentum is placed over the duodenum and the incision closed.

The T-tube usually drains freely for the first three to five days, the period of swelling of the duct due to trauma of exploration. At the end of this time the swelling and

edema recede and allow a large portion of bile to pass directly through the short arms and into the duodenum. This is highly desirable, and its early occurrence promises a short and satisfactory convalescence. About the ninth day the cigarette drain is removed, and the T-tube is clamped periodically to test the patency of the common duct. A moderate discomfort when the duct is first distended need not cause alarm, but if persistent pain occurs after a day or two, a cholangiogram should be made. Twenty cubic centimeters of 48 per cent hippuran solution as described by Best are injected through the long arm, and an x-ray of the biliary tract is taken. In the event of obstruction the tree pattern becomes blunted, and little or no hippuran enters the duodenum. Overlooked stones usually appear as gaps in the course of the duct. In this event the biliary flush as described by Best is instituted. It consists of the administration of 3 to 5 tablets (3¾ gr.) of dehydrocholic acid every four hours to increase the secretory pressure within the biliary ducts. These are given orally. At the same time a three-day regimen is begun. On the first day a 1/100 gr. tablet of nitroglycerin or glyceryl trinitrate is placed under the tongue, morning, noon and night. On the second day a hypodermic of atropine sulfate (1/100 gr.) is substituted for the nitrate three times. On the third day the nitroglycerin or glyceryl trinitrate is repeated as on the first day. The common duct is gently irrigated once daily with physiologic saline solution through the T-tube, and the tube is allowed to drain five minutes, after which 10 to 30 cc. of warm sterile olive oil or lipiodol are instilled. After thirty minutes the tube is clamped. Each morning the patient is given 2 drams of magnesium sulfate solution and each evening an ounce of olive oil or thick cream by mouth. This treatment may be repeated after a few days of rest if repeated cholangiogram still shows a stone.

When the remaining stone lies above the T-tube, the tube of course must be withdrawn at least far enough to remove the short arms from the common duct. It is well to delay this until the fistulous tract has been well established, a matter of about two weeks. In this type of case the Best technic appears to be less irritating, as the injection of alcohol-ether solution is not without distress to the patient anyhow, and its injec-

tion through a fistulous tract becomes especially disagreeable.

Fortunately this distressing situation is rare. In the vast majority of cases, clamping the tube causes little or no discomfort, and it is gradually clamped continuously. About the twelfth day the tube is removed with a steady gentle pull, which causes very little discomfort to the patient. The fistulous tract closes quickly with surprisingly scant bile drainage on the dressings.

Three thousand to 5000 cubic centimeters of 5 per cent glucose solution are given every twenty-four hours intravenously for the first few days following the operation. Then fruit juice and liquids containing sugar are usually tolerated orally in quantities sufficient to replace clyses. Small transfusions are valuable in jaundiced patients with hemorrhagic tendencies and to these supply vitamin K, which Snell has described. The patient's diet is not greatly restricted during convalescence. We feel that cooked fat should be restricted and gassy foods avoided. But the effect of cream, butter and salad oils on the sphincter of Oddi should be remembered, and liberal amounts will be well tolerated. We give bile salts after meals routinely for a month or two until the liver function has been resumed.

The convalescence of common duct stone cases that have been diagnosed before jaundice has occurred or become marked is very rapid. The absence of hemorrhage is one notable feature that can be attributed to earlier diagnosis. The liver function is the most important consideration in the mortality of this condition. In early cases it is still good, and, after the obstruction is relieved, regeneration of function occurs immediately.

SUMMARY

Postmortem statistics show the presence of duct stones in about one-fourth of the cases of disease of the biliary system. The incidence of recovered stones from the bile ducts is much less than that, except in a few clinics where explorations are done routinely in 50 per cent of the cases. The percentage of recovery subtracted from 24 per cent (postmortem incidence) indicates a failure in treatment.

The indications and symptoms of duct stones are enumerated, including a sign not often mentioned in the literature; also the

operative findings that are commonly seen when calculi are present in the ducts are mentioned. Diagnosis before jaundice becomes marked constitutes a desirable accomplishment because of lessened mortality and shorter convalescence.

A technic for exploration of the bile ducts and dilatation of the papilla of Vater is described. Postoperative cholangiograms should be done, either routinely or at least when the postoperative course suggests duct obstruction. The Best technic for managing remaining duct stones is outlined, together with postoperative care.

HEART AND UPPER ABDOMINAL DISEASE*

THEIR DIFFERENTIAL DIAGNOSIS

By

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This subject has been selected for the reason that the differential diagnosis of heart and upper abdominal disease probably comprises ninety per cent of practice. It is likely that more errors are made in the diagnosis of this combination of diseases than in any other allied conditions. It is very important that the right diagnosis be made since the treatment of each is so different. For example, the treatment of coronary and gallbladder disease is entirely different, and the method of treatment of one would be entirely contraindicated in the other, although they may have similar symptoms. It has been my experience that patients have been treated for upper abdominal disease when it was heart disease more often than conversely.

I shall not try to discuss the differential diagnosis of all the diseases of the heart or of all the upper abdominal diseases. That would take too long. I shall discuss the more common ones only and those whose symptoms are similar. In the heart group I shall include coronary disease, angina pectoris, hypertension, pericarditis, myocarditis and endocarditis. In the abdominal group I shall include gastric and duodenal ulcer, cancer of the stomach, chronic gastritis, cholelithiasis, cholecystitis and diaphragmatic hernia.

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Pernicious anemia may be confused with either one, since pernicious anemia may give indigestion, anemia, dyspnea and general weakness, while heart and upper abdominal disease will give the same thing, but the blood picture will help one arrive at a diagnosis.

Pain, indigestion, nausea, vomiting and shock may be the symptoms of any of these diseases, and all of them may have one or the other. In order to make a differential diagnosis it is necessary to have a complete history, and a physical, x-ray, electrocardiographic and competent laboratory examination. In the last twenty years much has been learned about roentgenology, electrocardiography and laboratory procedures, and with these means more correct diagnoses are possible. A heart examination is not complete unless these things are done. The same is true of abdominal examinations.

Coronary and gallbladder diseases probably are more difficult to differentiate than any other combinations in these two groups. Of course, in typical cases, the diagnosis is easy to make, but there are very few typical and textbook cases in practice. By gallbladder disease I mean cholelithiasis and cholecystitis. Pain is the most common symptom of each disease. The character and the location of the pain helps, but I have seen cases in which the pain was almost identical. The pain in coronary occlusion is more aching in character while that in gallbladder disease is sharp and colicky and is always intermittent.

An electrocardiogram helps in the differential diagnosis, and in some cases it is almost impossible to make a diagnosis without it. An x-ray of the gallbladder will reveal a stone in a great majority of cases, but it may not. These patients are both in shock, and may have indigestion and nausea. The sedimentation rate in these two diseases is very helpful. In coronary occlusion, there is an increased sedimentation rate. In gall stones, the sedimentation rate is normal. Coronary occlusion will usually show a little fever while gall stones do not. There may be a leucocytosis in both but it is more common in coronary occlusion. I have thought several times that people with coronary disease were more susceptible to gall stones than other people, but now I doubt if this is true; I think it is only a coincidence. Without the aid of the x-ray, laboratory

and an electrocardiogram, it is almost impossible in certain cases to differentiate the two diseases.

Any patient who comes to the office complaining of indigestion and who is above the age of 40 should cause one to think of heart disease. On the other hand, if the patient is below the age of 40, upper abdominal disease is the most likely diagnosis.

Indigestion is a very common complaint in both groups of diseases. In chronic myocarditis, indigestion is probably one of the first symptoms to appear. These people complain of indigestion after eating a meal, and especially if they do not lie down and rest afterwards. The history helps in making a diagnosis between chronic myocarditis and gastric disease, such as gastric and duodenal ulcer and chronic gastritis. Most ulcer cases are relieved with soda while those with myocarditis are not. There, again, the laboratory, x-ray and electrocardiogram help one to differentiate.

Angina pectoris is very hard sometimes to differentiate from gastric and duodenal ulcer. Both have abdominal pain, indigestion and occasional nausea. The history will help to differentiate between the two. Angina pectoris always comes on following an emotional upset or an exertion, while with duodenal ulcer and gastritis the pain is usually present when the stomach is empty. True angina pectoris, if it is a disease entity, never awakes a patient from sound sleep. This is a rather broad statement, but I believe it is true. Both diseases appear in highly strung and nervous individuals. Angina pectoris appears more commonly in middle and old age while duodenal ulcer is in younger individuals ordinarily. The electrocardiogram is of very little assistance in true angina. The x-ray is a great help in duodenal ulcers and in chronic gastritis.

Cancer of the stomach and coronary disease may sometimes be difficult to differentiate, but with the history, x-ray and electrocardiogram the diagnosis may be made correctly. Pain in coronary disease usually comes on with the attack while pain in cancer of the stomach is a late symptom. Gastric analysis helps in the diagnosis of cancer of the stomach.

Hypertensive heart disease and gastric and duodenal ulcer may cause some difficulty in diagnosis. Most hypertensive patients have indigestion and abdominal dis-

tress, and a great majority of them are treated for some stomach trouble. Of course, the sphygmomanometer helps in this diagnosis. Repeated blood pressure readings are very important. I do not think that one should take a single reading and make a diagnosis of hypertension, because patients who come into your office are usually frightened and worried over their condition, and the blood pressure will be increased. I think the blood pressure reading should be made at the same hour each day for several days before the reading can be depended on.

Acute pericarditis and ruptured or leaking gastric and duodenal ulcers sometimes are very difficult to differentiate. It is important that the correct diagnosis be made since the treatment of the one is absolutely contraindicated in the other. I have seen two patients operated on for a ruptured ulcer, and the correct diagnosis was made at autopsy. I happened to be a consultant in one of these cases. Both diseases give excruciating pain in the epigastrium, shock, fever, leucocytosis and rigidity of the abdomen, but a complete history and electrocardiogram have been a great help in differentiating these diseases. A friction rub helps to differentiate but one does not always hear a friction rub in pericarditis. In pericarditis there is often a history of indisposition for several days, some dyspnea, a little fever, and perhaps an earlier acute infection, while with a ruptured gastric or duodenal ulcer there is a history of indigestion after meals, relieved by soda, and some midnight pain relieved by a cracker. It can be seen then that the history helps a great deal in differentiating any of these diseases.

Endocarditis and cholecystitis may resemble each other very much. Both will give symptoms of indigestion, pain in the upper epigastrium, rapid pulse, septic temperature and anemia. There, again, the history, blood cultures and x-ray help in the diagnosis. In cholecystitis one may have a little jaundice. The pulse may aid in the diagnosis of these two diseases. In endocarditis the pulse is rapid, thready and weak, while in cholecystitis the pulse is not so rapid, has good volume, and is regular; and physical examination will help in the differentiation.

Diaphragmatic hernias sometime are very difficult to differentiate from coronary disease, angina pectoris and hypertension. Most

diaphragmatic hernias are found in the course of examination for some other disease. In diaphragmatic hernia, there is indigestion, the patient wakes up a night with pain in the epigastrium and in the chest which resembles coronary disease, angina pectoris and sometimes hypertension, but the history and the x-ray readily make the diagnosis. Whenever a patient has a gastric x-ray, one exposure should be made with the patient lying flat, since, occasionally, there will be picked up a diaphragmatic hernia which is causing the symptoms that the patient is complaining of.

The appearance of a cardiac patient is an aid in making a diagnosis of heart disease. Cyanosis is a very common symptom. Occasionally in severe abdominal disease there may be some cyanosis because of cardiac embarrassment. Coronary occlusion and angina pectoris give a facial appearance of anxiety, while upper abdominal disease does not. Observation of a patient is very necessary in making a diagnosis of any kind. In certain heart diseases, clubbing of the fingers, pulsation of the carotids and dyspnea are present.

In conclusion, it is noted that the differential diagnosis of heart and upper abdominal disease may be very difficult, but with a careful history and the mechanical means available as aids to diagnosis errors should be few.

TUBERCULOSIS IN THE AGED*

By

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The idea which prompted this study of tuberculosis in old people first occurred to us some four or five years ago when Dr. Groesbeck Walsh and I in an informal conversation remarked to each other the startling frequency with which we were confronted by cases of tuberculosis in people past fifty years of age. We felt then, as we do now, that too little had been said or done about it, that tuberculosis in this group was being neglected; and we decided it might be interesting to look through our records and see what we could find in them that might

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help us to a better understanding of the subject. What we found was enlightening to us. It certainly did not conform to beliefs we had always had concerning tuberculosis in old people.

In presenting these findings to you, I do so realizing there is no more unpopular individual than the non-conformist. If what I say here varies from ideas you have had in the past, it is not because of any desire on my part to change your belief. It is simply that I state facts as they appear in our records.

In Employees' Hospital we had not only noticed the frequency of the disease but had observed also the suddenness of its onset, and in most cases the rapidity of its course to a fatal termination. Once we had become conscious of this fact, it seemed that patients presented themselves more and more frequently. It was, therefore, decided that we should review all cases of tuberculosis in this age-group observed in this hospital within the past ten years.

We found fifty-seven cases of pulmonary tuberculosis in which the disease seemed to be primarily in the lung and where there were no complicating diseases. Since January of this year a review of the intervening charts has been made. Twenty-three additional cases have been picked up. They were divided as follows as to race and sex:

WHITE		COLORED	
Male	Female	Male	Female
35	18	22	5

According to the decade of life the following was found:

Number of cases between	51-60	48
Number of cases between	61-70	23
Number of cases between	71-80	8
Number of cases past	80	1

Before going into a study of the facts drawn from this series, let me say that, as far as we have been able to find, there has been very little study of tuberculosis in old people. In three of the latest text books on medicine, now considered as standard, no notice is made of tuberculosis in this age-group. In fact, while volumes have been written on tuberculosis as a whole, and as much or more on tuberculosis in childhood, very little is said about it in the aged. We would presume from this that tuberculosis in this group was not considered different from tuberculosis in young adult life.

In reviewing the literature I found a most interesting article delivered before the National Tuberculosis Association twelve years ago by the late Dr. Edgar Sydenstricker. In speaking before that body on the subject "Tuberculosis Among Relatively Neglected Groups," Dr. Sydenstricker considered this age-group as neglected. Among other things he said: "Old age constitutes a group that truly may be said to be a neglected one. In the age period 55-64 nearly one out of every 1,000 persons dies of tuberculosis and in the age period 65-74 the death rate is even a third higher. A large proportion of these deaths are due, not to infection of early life, but to conditions arising from middle age—a fact which constitutes a challenge to preventive work in a group of persons so far not greatly emphasized in anti-tuberculosis efforts."

From this we see that Dr. Sydenstricker recognized the problem, but unfortunately for us he was not concerned with the clinical aspects of the disease. He, like most others who have studied tuberculosis, confined himself largely to the public health aspects of certain population groups: the American Indian, the Negro, etc., and concerned himself with environmental and racial characteristics, two large groups stressed being the economically poor and the constitutionally weak.

Early in 1939 The Bulletin of the American Academy of Tuberculosis Physicians featured an article by Von Neumann of Vienna, the subject of which was "Tuberculosis in the Aged." However, he too was more concerned with the public health aspects of the condition than with its clinical features. He recognized the fact that it occurred frequently and spoke interestingly of its long dormant state in the bronchial glands, its light-up in later life, and reinfection of the lungs. All this, we might say, is the same empirical dogma one sees and hears wherever late tuberculosis is mentioned.

In passing, Von Neumann states that it has been observed how rapidly fatal this old lighted-up tuberculosis could become. But he, like all the others, fails to give us a clinical picture of tuberculosis in people past middle age.

What I wish to do is to give you some of the clinical features of the condition and some statistics that we thought interesting.

From the eighty cases which we reviewed, we found the following facts:

1. Diagnosis in these cases was not difficult. It was based upon one of two things: either positive x-ray findings or positive sputum. Sometimes both were present. However, positive sputum in old people is very difficult to get because many of them do not cough very much, or if they do the cough is very likely to be non-productive. The fact that there is not much cough will be more readily appreciated when we see that in this entire group only one gave a history of ever having had massive pulmonary hemorrhage, and only four had hemoptysis. The x-ray observed in people of this age-group with tuberculosis we found very similar to x-rays of tuberculosis in young adults. We now question whether very many films which show extensive old generalized pulmonary fibrosis are really films of tuberculous patients.

2. The second thing noted in this series was the extremely short duration of illness prior to the time the patients first came under observation. Not only was the illness brief before admission, but we were rarely able to connect present illness to any old tuberculous history in youth or middle age. Apropos of this, from the eighty charts the following facts were found:

Twenty-hour had been ill less than one month, the time varying from two days to four weeks.

Forty-one gave a history of illness of from one to eleven months (average $2\frac{3}{4}$ months).

Fifteen gave a history dating back more than one year, the average being two years and three months.

Only one of the entire group gave a history of having had tuberculosis earlier in life. This patient stated that she had been told when she was thirty that she had pulmonary tuberculosis.

If any of the others had symptoms referable to the chest in early life they failed to mention it, and the interns who took the histories failed to elicit it.

3. As to the symptoms, most were admitted to the hospital acutely sick; with high fever, cough, etc. Many had a provisional diagnosis of influenza, post-influenza, bronchitis, pneumonia, etc. Tuberculosis was discovered on routine examination or when x-rays were taken. The course was that of

the usual case of acute infectious disease, with added features seen ordinarily in cases of tuberculosis. Among these added features were cough, weakness, loss of weight, etc. For example, heading the list of complaints stated on admission was cough, but, even though it was first, only forty-seven complained of it, and in only twenty-four of the forty-seven was cough the chief complaint. There were sixteen in whom cough was a second consideration, and seven barely mentioned it in passing. Loss of weight followed next, then weakness, then dyspnea. Only four of this series had hemoptysis, and it was mild. As I said before, only one had a massive hemorrhage. Nearly all had fever on admission. Only seven complained of pain in the chest. There was a smattering of other complaints, such as asthma, nausea, abdominal pain, cerebral hemorrhage, etc.

The average stay in the hospital was 10.1 days.

Of the last twenty-six charts reviewed, we find that three of the patients died in the hospital, and two died in less than a week after discharge.

A moderate anemia, hemoglobin of around 70 per cent, and a red blood count of around 3,750,000 was the rule.

The systolic blood pressure ranged from 172 to 100. The diastolic pressure ranged from 100 to 60. The average was 128/78. We did not find in this group the low average blood pressure found in young adult life.

Of the eighty patients studied, we have been able to trace sixty-three. Seventeen have been lost sight of. Of the sixty-three patients we have been able to trace, fifty-five are now dead. Only eight are living. Of the ones who died the average life after they left the hospital was thirty-five weeks.

CONCLUSIONS

If we have come to any conclusion in this brief study, it is that elderly people who come to us with history of cold or cough and fever, accompanied by rapid weight loss and weakness, should be looked upon as highly suspicious; and, second, that tuberculosis in the aged is just as surely fatal, and frequently much more rapidly so, than is malignant disease.

DISCUSSION

Dr. Cabot Lull (Birmingham)—Dr. Norton has presented an unusual study of tuberculosis, one of a group which he calls "neglected." This is a real contribution to tuberculosis literature and its value should rank along with that of another unusual paper which was presented several years ago to the Southern Medical Association by Dr. Hartwell Cocke. The title of this was "The Accidental Discovery of Symptomless, Non-Manifest Pulmonary Tuberculosis by X-Ray." Both authors, by emphasizing x-ray, depart from the beaten path which leads us along by history, signs and symptoms, and often leaves us in a wilderness of diagnostic doubt, and hence inaction. Not that we should for one moment disparage history, signs and symptoms when available, but so often the old person is non-cooperative. There may be a denial of all suspicious history and either unwillingness or actual inability on the patient's part to furnish satisfactory specimens of sputum, and it goes without saying that single small collections of sputum examined in the usual way rarely yield satisfactory results, and when reported negative lead the doctor and the family into a sense of false security.

In the final analysis, of course, whether or not we make an early or correct diagnosis depends on our attitude, the tuberculosis-conscious state of mind. To get this scientific approach, we must needs destroy some old beliefs. There was once a saying that bronchial asthma is never associated with tuberculosis. Also, it has been considered very unlikely that persons with vascular hypertension could harbor tuberculosis and certainly chronic bronchitis, especially of the aged, is very often tuberculosis of the lungs with accompanying bronchiectasis. These features along with others have been emphasized by the essayist, who stresses the essential value of x-ray study. My own feeling is that no adequate diagnosis of tuberculosis of the lungs is ever possible without radiographic study, and usually this needs to be repeated at intervals if progress is to be noted.

So much for diagnosis in which we agree with the essayist in all essentials, and particularly commend his thorough study of his cases. However, we are puzzled when we hear the author say, "We had observed the suddenness of its onset, and in most cases the rapidity of its course to fatal termination." He states that of the eighty cases, sixty-three can be traced and of this number fifty-five are dead. Eight are living. "Of those who died, the average life after leaving the hospital was thirty-five weeks." This death rate of nearly seventy per cent in thirty-five weeks makes a startling record. But it is unfortunate in these cases that the immediate cause of death could not be stated nor the condition of the lungs after death be ascertained. First, as to suddenness of onset, most of us still believe tuberculosis of the lungs is usually a chronic disease of relatively low primary mortality, that it follows a basic evolutionary pattern (according to Kuss and Gohn) from primary infection through generalization and finally localization. In this regard it resembles syphilis with its three stages. Endogenous spread as opposed to exoge-

nous reinfection is generally accepted now, though it is possible for an older person to get a new infection by heavy exposure, causing hypersensitization resulting in a breakdown in latent lung lesions. We would suspect then that most of these old persons, who ran such a short fatal course, had suffered with previous unsuspected infection. Probably, many advances and retreats of the disease in their lungs had left scarred lung fields, but, finally, as Miller puts it, "We observe the process to take on this terminal form in chronic consumptives whose resistance has become exhausted in the course of long protracted disease or even in patients with latent or arrested lesions flaring up in association with some severe crisis in their physical, social, economic, and mental well-being." The paper does not deal with treatment and it would be improper to inject methods of treatment into this discussion. However, if one were permitted the inquiry, it would be most interesting to surmise how mortality in this group might have been affected by institutional care and judicious application of modern collapse therapy. Finally, Dr. Norton's main theme is discovery of tuberculosis in unsuspected old folks and this not only clears up many problems of diagnosis but gives us clues as to prevention of spread of this disease.

 ASPHYXIA IN THE NEW BORN*

By

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Probably the most critical period in life evolves around the first few minutes after birth. The necessity of a quick yet careful appraisal of the newborn infant is obvious. The welfare, and possibly the life of the infant, depends to a large extent upon the recognition of the infant's condition and the prompt institution of such therapeutic methods as may be indicated. The responsibility of the physician at this time is enormous and it is his duty, if he wishes to practice obstetrics, to devote the necessary time and study towards a thorough understanding of the complex mechanism which functions in the newborn child. Since cyanosis is the symptom most often observed in this period, it behooves the physician to understand the factors involved in the production of cyanosis and asphyxia, as well as the most efficacious method of resuscitation. A thorough understanding of recent theories and practices should greatly reduce fetal morbidity and mortality. The proper dif-

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ferentiation of the causes of cyanosis and asphyxia may save the infant from the barbarous attempts at resuscitation which are too often instituted.

Hemoglobin has the unusual capacity to store and to transport oxygen. (Only about one per cent of oxygen remains in solution.) Hemoglobin has the remarkable ability to release oxygen when the oxygen tension in the surrounding medium is reduced. When the blood leaves the lungs the hemoglobin is about 95 per cent saturated with oxygen, or it may be said that the blood contains 95 per cent oxyhemoglobin. When oxyhemoglobin reaches the capillaries, the oxygen content of the tissue cells and fluids is low and the flow of oxygen to the cells which require oxygen results.

Normal blood contains approximately 15 grams of hemoglobin per 100 cubic centimeters. Lunsgard has estimated that cyanosis will be observed when about one-third of the hemoglobin is reduced; that is, when 5 grams of reduced hemoglobin is present in the blood. (Three-fourths of a gram of hemoglobin will take up one cubic centimeter of oxygen. Thus one gram of hemoglobin can absorb 20 volumes per cent. Five grams will take up 6.7 cubic centimeters of oxygen, or 6.7 volumes per cent. Thus cyanosis is expected when the blood is 6.7 volumes per cent unsaturated.)

The next step in the understanding of the mechanism involved in the production of cyanosis is a survey of the organic lesions and functional disorders which may have cyanosis as a prominent symptom. These may be classified under three main subdivisions.

- A. Central Nervous System
 - 1. Trauma
 - 2. Asphyxia
 - 3. Medication (analgesia and anesthesia)
- B. Pulmonary Disturbances
 - 1. Atelectasis
 - 2. Obstruction
 - 3. Pneumonia
 - 4. Edema
 - 5. Hemorrhage
- C. Circulatory
 - 1. Congenital defects
 - 2. Peripheral circulation

I would like to have you think of cyanosis as a symptom which is due to an insufficient amount of oxygen in the capillary blood. Strictly speaking it should be defined as the bluish color imparted to the skin by an ex-

cessive amount of reduced hemoglobin in the blood. However, for practical purposes, it may be regarded as due to an insufficient amount of oxygen in the capillary blood. (A bluish discoloration of the skin may also be caused by methemoglobin or sulfhemoglobin in the circulating blood. This is not seen in the newborn period.) Asphyxia is usually described in textbooks as due to an interference with breathing in the newborn infant. This is not strictly true. Asphyxia is a diminution of available oxygen in the circulatory blood and is not necessarily associated with respiration.

Anoxia is defined as oxygen lack in the tissue cells.

Anoxemia signifies a low oxygen content of the capillary blood.

All these terms have one common factor—a lack of oxygen. While they are different in minor respects it is my belief that this paper will be greatly simplified if we think of them in the same general term—lack of oxygen.

The importance of this lack of oxygen in the tissues assumes staggering importance when it is realized that cells of the central nervous system may suffer irreparable damage when they are completely deprived of oxygen for as long as a minute. It is potentially true that varying degrees of damage may occur from partial lack of oxygen over intervals. This opens up a wide field of speculation as to the etiology of such conditions as epilepsy, psychopathic personalities and lesser degrees of mental and physical inferiority.

There are many classifications of asphyxia but to give them would only serve to confuse. W. C. C. Cole has developed a rather simple classification which will also give a strong indication as to the cause of the asphyxia, and thus it will facilitate the institution of treatment. Asphyxia may be of peripheral or of central origin. Under the peripheral type he includes asphyxia from any interference with the entrance of oxygen into the fetal circulation. This may include the following:

- 1. Premature separation of the placenta.
- 2. Interference with umbilical cord circulation.
- 3. Simple strangulation.
- 4. Obstruction of air passages from any cause.
- 5. Atelectasis.

Conversely, asphyxia of central origin would include any condition resulting from

some interference with the function of the respiratory center. Cole believes that this may be due to gross injuries to the brain such as occurs in hemorrhage, edema or lacerations; or it may be due to circulatory changes associated with the phenomenon of shock (this is quite important and one that is frequently overlooked), or it may be due to the effect of toxins, analgesics and anesthetics which reach the baby through the maternal circulation.

The newborn infant is a much neglected individual. As long as the baby ultimately breathes the physician has been fairly well satisfied with the results. Recently two important developments in our fundamental knowledge have placed a new significance upon the asphyxiated infant. The first of these is an entirely new conception of the inauguration of respiration. It was formerly thought that the infant was born in a state of physiologic apnea, and that, as the placental circulation ceased functioning, the accumulation of carbon dioxide in the baby's blood stimulated the respiratory center and caused respiration to begin. This theory has been discarded due to the remarkable studies of Snyder and Rosenfelt. They have shown, beyond the question of doubt, that respiration is not a function which starts abruptly at the time of birth. They observed that the movements of respiration occur, in regular rhythm, during the latter third of intrauterine life. Moreover, Snyder and Rosenfelt have shown that once these movements are established, they are not interrupted unless some profound influence is exerted on the fetus. If this conception is correct, and I believe it is, it means that the normal infant should take its first breath within a very few seconds after birth. This puts an entirely new significance upon the baby who is not breathing at birth. It means that such a baby has been profoundly affected by something, whether it be strangulation, anesthesia, narcosis or shock from the trauma of labor.

Asphyxia (oxygen want) produces a profound disturbance in the fetus which affects not only the central nervous system but every organ and tissue of the body. The changes resulting from anoxemia (oxygen want) progress in an orderly fashion through various stages. The *first stage* is one of congestion with intense engorgement of the veins and capillaries. The *second stage*

is one of congestion plus edema and, in the third stage, in addition, petechial hemorrhages appear. These hemorrhages are the result of diapedesis of red cells into the perivascular spaces or of actual rupture of the capillaries. In this third stage evidence may be found of the actual death of tissue, presumably the result of anoxemia or ischemia. The fourth stage is characterized by congestion, edema, petechial hemorrhages and gross bleeding. The gross bleeding may be the result of continued capillary oozing or of rupture of small veins.

There is a certain degree of trauma associated with every normal labor. Evidence has recently been presented to substantiate the theory or conception that all newborn infants may be in a mild state of shock. Even under the most ideal conditions, the trauma incurred in the passage of the head through the birth canal would probably be sufficient to produce a considerable degree of shock to an infant who has been extremely well protected throughout intrauterine life. It has been reported that newborn infants, after a hard labor, show a fall in blood pressure, in blood volume and in blood flow. In addition there is usually observed pallor and coldness of the skin, cyanosis of the extremities, fall in temperature, and apathy. This is the same syndrome observed in patients with surgical shock and it seems reasonable to believe that the conditions are similar. Coller, in his work on water metabolism, has demonstrated that one of the outstanding features in shock is the loss of large amounts of water from the body, chiefly through the skin and lungs. Possibly this may be an explanation of the so-called physiologic weight loss observed in all newborn infants.

There are certain factors in the production of asphyxia which cannot be well avoided. Included among these are prematurity, the age, parity and condition of health of the mother. Obviously an infant born of a mother suffering from one of the various forms of toxemias of pregnancy would be more likely to have asphyxia. The accidents of labor, the many forms of dystocia, the duration of labor, and the necessity of operative delivery cannot be well avoided. The quite serious observation that practically all analgesics and anesthetics have a depressing effect upon the respiratory center certainly calls for a study of these drugs and

a careful appraisal of their comparative importance in the causation of neonatal asphyxia. Obviously asphyxia was known long before the current use of analgesia was begun. Rosenfelt and Snyder have approached the problem of obstetric anesthesia by a new method which was based upon the direct observation of intrauterine respiratory movements in animals. They observed that most anesthetics, of nonvolatile and volatile type, depress intrauterine respiration long before surgical anesthesia is reached in the mother. Only 30 per cent cyclopropane with 70 per cent oxygen was observed to give anesthesia to the mother without interruption of the fetal respiratory rate.

Wyman C. Cole and his co-workers, Kimball and Daniels, at the Woman's Hospital in Detroit have thoroughly examined and recorded the important findings in five thousand consecutive deliveries. These were analysed with a view of determining the relative importance of the various factors which contribute to the production of asphyxia in the newborn infant. Cole and his workers found sufficient evidence to state their conclusions which are as follows:

1. The most important single factor in the production of neonatal asphyxia is *prematurity*.
2. The next most important factor is the trauma of labor, whether it is normal labor or whether it is accentuated by dystocia and operative delivery.
3. Sedatives in any amount definitely increase the incidence of asphyxia in the baby in direct proportion to the amounts given.
4. General anesthesia in any amount definitely increases the incidence of asphyxia in the baby in direct proportion to the length of anesthesia.

These observations are very important and they suggest that possibly the effects of analgesia may be underrated. The important question which we should ask ourselves now is whether or not this depressant action will increase the morbidity and mortality of the infant. Because of some differences of opinion in medical literature this question cannot be answered categorically. Jacob Kotz believes that analgesia does not prolong labor, increase the incidence of operative delivery, or affect adversely the morbidity or mortality of the infant. Cole, whose conclusions were just stated, asserts that his other studies justify the statement that analgesia decreases birth shock and also decreases the so-called physiologic weight

loss. This observation was also made by Kotz. It is my belief that these sedatives are relatively safe when used in small or moderate doses by men experienced in the art and the science of obstetrics.

SUMMARY

In this paper I have attempted to correlate the theories and the observations of the various scientists who have made extensive studies of asphyxia. These studies all seem to point toward oxygen want as the chief operative factor. This oxygen want may be caused by any number of conditions and it has been the intent of this article to discuss these conditions briefly without becoming too deeply involved. Whether this lack of oxygen is called cyanosis, asphyxia, anoxia or anoxemia, the infant is in dire need of oxygen. If this oxygen is not supplied in a very short time there is grave danger of irreparable damage to the cells of the central nervous system. In the less urgent cases this damage may not be discernible until later in life. I regret that time limitations imposed forbid a thorough discussion of resuscitation. It is essential that the physician should realize the potential effects of the analgesics and anesthetics. Preventive medicine is adaptable in this field as in nearly all other branches of the profession.

Closer cooperation between the obstetrician and the pediatrician is highly desirable. More frequently in the last few years, the obstetrician, when expecting a difficult delivery, has requested pediatric attendance at the delivery. We must not forget grave potential dangers of asphyxia in the newborn child and we must realize our tremendous responsibility to help produce a normal infant, and not just an infant.

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CANCER OF THE FEMALE REPRODUCTIVE ORGANS*

WITH REFERENCE TO 179 CASES STUDIED IN THE
HILLMAN TUMOR CLINIC FROM
APRIL 1, 1938 TO APRIL 1, 1941

By

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Cancer of the female reproductive organs accounts for 30 per cent of all cancer deaths in women. In Alabama the average number of deaths per year is 395. For each death there are about three living cases. This means there are approximately 1,200 cases in the state annually. Cancer of the cervix accounts for an average of 350 deaths per year.

This paper proposes to discuss some of the high points of the subject in the time allotted. For convenience of discussion I have divided it into three groups; namely, cancer of the external genitalia, cancer of the uterus and cancer of the adnexae.

The external genitalia are the original site of from 5 to 6 per cent of all cancers in the female. Sixty per cent occur over 60 years of age and less than 15 per cent occur under 40. Taussig¹ reports an average of 58 years in a group of 155 cases. Here the lesion is most frequently squamous cell carcinoma, but sarcoma, embryonal tumors, melanoma and metastatic tumors do occur rarely. The

labiae, the glans clitoris and the vestibule are the frequent sites. Leukoplakia is the precursor lesion in 60 per cent of cases. Old luetic ulcers are the next most common causative lesion.

Cancer of the vulva begins as a small lump or nodule, and itching is the earliest symptom. Inexcusable delay is the rule, and often salves have been tried for over a year before the elder, timid woman will see the doctor. The average delay is about 18 months. In spite of delay and often preliminary malpractice, the lesion offers a reasonably good prognosis even though two-thirds of the cases have already metastasized to the inguinal and iliac lymph glands. This is true because the cancer cells in most instances are well differentiated and grow slowly. The relatively benign lesions arise from the skin of the labiae and prepuce, and the more malignant lesions arise from the glans clitoris, Bartholin's glands and from ulcers.

Surgery is the treatment of choice and Bassett's two-stage operation is advocated. In the first stage, Taussig removes the inguinal and iliac glands on both sides. Four to six weeks later the original lesion is removed by vulvectomy. Pack² prefers to do the vulvectomy first. This procedure will give a five-year survival in about three out of five cases. Seventy per cent of these cases are operable when first seen. The remaining 30 per cent are inoperable by reason of extensive growth or metastasis and the hazards of advanced age.

X-ray, even with supra-voltage machines, offers little hope of cure and is too frequently accompanied by painful burns. The cancer cell being of adult type responds poorly to irradiation. Complete excision of leukoplakia, intensive antiluetic treatment of tertiary lesions, removal of vulvar warts in women past menopause, and adequate treatment to urethral caruncles as prophylactic procedures would reduce the number of vulvar cancers fifty per cent.

Primary cancer of the vagina is rare, highly malignant, and tends to metastasize early. Irradiation is considered the best method of treatment but results are discouraging.

Our second group, cancer of the uterus, accounts for 162 of our 179 cases, or 90 per cent.

1. Taussig, F. J.: Cancer of the Vulva; Analysis of 155 Cases (1911-1940), *Am. J. Obst. & Gynec.* 40: 764-779 (November) 1940.

2. Pack, G. T., and Livingston, E. M., editors: *The Treatment of Cancer and Allied Diseases*, New York, Paul B. Hoeber, Inc., 1940.

Cancer of the uterus accounts for 85 to 90 per cent of all malignancies of the female reproductive organs according to general reports. In this group we had 150 cases of cervical cancer. Only five were adenocarcinoma, the remainder being squamous cell in type.

Study of case histories reveals some striking facts and indicate why we have 350 cervical cancer deaths per year in Alabama. Most striking and deplorable is the delay from the onset of symptoms until the patient solicits aid from the physician. In our cervical cases this time delay averaged 8.2 months. Usually the disease is older because it is asymptomatic in the early stage of growth. Only 30 per cent of this group had the lesion limited to the cervix (Clinical IA) by physical examination. This means that nearly seventy per cent of cervical cancer cases in indigent patients when first seen have little or no chance of recovery and that most cases are dead in from 18 to 24 months.

Half of our patients were seen by private physicians before coming to the clinic and gave a history indicating delay caused by the physician in 6 per cent by reason of incorrect diagnosis or inadequate advice. Study of cause of delay indicated the urgent need of continued education of laity as to early symptoms and to the necessity of semi-annual pelvic examinations.

Study of age incidence found 4 per cent of cervical cancer under 30 years of age and about 6 per cent over 60 years. Forty-one per cent occurred in the forties and 27 per cent in the thirties. The occurrence of 90 per cent of cancer between the ages of 30 and 60 years indicates that women in these three decades should receive competent pelvic examinations at least yearly. Sixty-one per cent were in the colored but this is true because the relative percentage of indigency is higher among Negroes. Frank R. Smith,³ in studying the nationality of cancer of the cervix, found the highest incidence in the Italian and the Scotch-Irish. The lowest incidence was among the Jews.

Early diagnosis and prompt and adequate therapy are essential in increasing our five and ten-year survivals. Biopsy is indispensable

in early diagnosis. Eight of our cervical cases were not suspected of being cancer clinically, but routine microscopic examination of removed tissue for other cause revealed the true lesion. We have seen cervixes that neither looked nor felt different from other erosions that were reported as cancerous on biopsy. Next to biopsy palpation of the cervix is most helpful. The feeling of a hard area or nodule at the external os or over the portio of the cervix should lead one to suspect cancer, particularly when nabothian cyst can be ruled out. Inspection of the cervix with the use of Schiller's iodine test is helpful in the well developed case but in the early case it is least dependable.

The treatment of cancer of the cervix is thorough irradiation. Surgery is no longer advocated because of the great difficulty of removing metastatic cancer cells, because of the high mortality rate, and because irradiation will do everything that surgery will do with less risk to the patient.

In recent years there has been a changing tendency to heavier irradiation. From 5000 to 7000 millicurie hours of radium at possibly two applications, supplemented with about 16000 r-units of deep x-ray, all within a 4 to 6 months period is about the average treatment required. Of course where only palliative treatment is indicated x-ray alone may be the choice.

A cross section of literature will reveal five-year survival rates of from 25 to 35 per cent in all cases. In the Clinical Group I cases (those limited to the cervix) the five-year survival rate is between 50 and 60 per cent.

Prophylactic therapy in cancer of the cervix is most important. The restoration to normal of the postpartum cervix by the obstetrician, the thorough removal of chronic infection by either electrothermal or surgical measures, the repair of deep lacerations of the cervix, and periodic pelvic examinations will prevent from 100 to 150 of our present 350 deaths yearly in Alabama.

Cancer of the uterus is a disease of older women. Seventy-five per cent occur over 50 years of age and 25 per cent occur under 49. As a whole the disease is much slower in progress than cancer of the cervix. Well developed cancer may exist without symp-

3. Smith, F. R.: Nationality and Carcinoma of the Cervix, *Am. J. Obst. & Gynec.* 41: 424-430 (March) 1941.

toms. Norman J. Miller⁴ found postmenopausal bleeding in 78 per cent, pain in 27, and watery discharge in 35 per cent. With any one of these symptoms at or after menopause, cancer of the fundus must be suspected. The time delay from onset of symptoms until the patient sought medical treatment was an average of 8 months in Miller's cases. In our cases the average was 14 months.

Fundus cases are grouped clinically according to the size of the uterus on bimanual examination. Such grouping is of prognostic value and also aids in the selection of treatment. Healey⁵ classifies corpus cancer without enlargement of the uterus as Group I, with enlargement less than the size of a 2½ months' pregnancy as Group II, with enlargement of more than a 2½ months' pregnancy with disease still limited to the uterus as Group IIA, and extension beyond the uterus as Group III.

Histologic grading is also of important prognostic value. Healy and Brown⁶ found, in 197 cases, adenoma malignum or Grade I present in 48 per cent of cases, adenocarcinoma Grade II present in 42 per cent of cases, adenocarcinoma Grade III and IV present in 20 per cent of cases, and adenocanthoma present in 5 per cent of all cases. When the uterus is less than the size of a 2½ months' pregnancy, the five-year survival for all grades should be 60 per cent or above. Adenoma malignum should give a 100 per cent survival rate. When the uterus is larger than a 2½ months' pregnancy or the tumor is of Grade III or IV, the five-year survival rate is relatively low.

Some variance of opinion exists as to the importance of surgery and irradiation for corpus malignancy. However, ideal adequate irradiation to the uterine wall has not been attained in spite of multiple applicators. To support this, uteri, when removed subsequent to what was considered to be adequate irradiation, show live cancer cells in 40 per cent of cases. Inadequate irradiation shows

even a higher incidence of live cancer cells present. In general, surgery and irradiation are not in competition but one is supplementary to the other.

In a series of cases treated by irradiation alone, Healey attained five-year survivals in 36 per cent of cases, with surgery alone 55 per cent, and with adequate irradiation followed by panhysterectomy 75 per cent in all cases.

For best results in corpus cancer we advocate intrauterine application of not less than 3600 millicurie hours plus 8000 r-units of deep x-ray two weeks later, followed by panhysterectomy in 2 to 4 months. Post-operative irradiation may be added if the case is considered advanced.

Sarcoma of the uterus is rare. We have had only one in the last three years and that recently in an inoperable case. Its incidence is reported at 0.22 per cent in all uterine disease, and 1 per cent plus in uteri with fibroids. The treatment is essentially surgical. Novak⁷ reports 30 per cent five-year survivals out of 50 cases treated by surgery and followed by x-ray.

Chorio-epithelioma is a rare, highly malignant tumor arising from the placental chorion and tends to metastasize early by way of the blood stream. Hydatidiform mole precedes it in half the cases. The treatment is irradiation followed by panhysterectomy. The five-year survivals are about 40 per cent. Biologic estrogenic assays are useful in diagnosis and in follow-up for recurrence.

Prophylactic procedures offer less in corpus cancer than in cancer of the cervix and external genitalia.

The third group of female reproductive organ cancers is the one I have considered under the adnexal group. Here only cancer of the ovary will likely be encountered. The fallopian tubes rarely develop cancer but when it does occur it is highly malignant and always fatal.

Cancer of the ovary accounts for about 9 per cent of all cancers in the female. It ranks with cancer of the stomach as a practically hopeless lesion. In the last forty years five-year survivals have not increased apprecia-

4. Miller, N. F.: Carcinoma of the Body of the Uterus, *Am. J. Obst. & Gynec.* 40: 791-803 (November) 1940.

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6. Healy, W. P.: Evaluation of Treatment of Uterine Cancer, *Am. J. Obst. & Gynec.* 40: 578-583 (October) 1940.

7. Novak, E., and Anderson, D. F.: Sarcoma of the Uterus; Clinical and Pathologic Study of 59 Cases, *Am. J. Obst. & Gynec.* 34: 740-761 (November) 1937.

bly and reported rates vary from 10 per cent to 35 per cent (Lynch⁸).

The disease is insidious in onset and may give no symptoms until it has already progressed to an incurable state. Pain and a feeling of fullness in the abdomen are the earliest symptoms. These are frequently ignored by the patient until intra-abdominal metastasis has already occurred. Of the thirteen patients that we have seen in the last three years, nine presented extensive intra-abdominal metastases, making adequate surgery impossible. One was operable only after irradiation. Pemberton⁹ reports 36 per cent of 149 cases incurable when first seen. Meyers¹⁰ reports 55 per cent incurable when first seen. Nine of our thirteen cases are already dead and only two seem to have a fair chance for a five-year survival.

Most ovarian cancers are cystic and present an intracystic papillary growth. The serous papillary cystadenocarcinoma is more frequent and more malignant than the mucinous type. The more solid tumors are most malignant and survival rates will vary according to the percentage of solid tumors in any series.

Ovarian cancer is more frequent in the older woman though it may occur at any age. Of Pemberton's series, 61 per cent occurred between 40 and 60 years of age. Bilateral tumors were present in 35 per cent.

Surgery is the choice of treatment, and panhysterectomy where feasible. Irradiation is of no value in increasing five-year survivals though it will increase three-year survivals and give symptomatic relief. A few inoperable cases may be rendered operable by irradiation.

Every surgeon should realize that, when an ovarian cyst is encountered on opening the abdomen, cancer is a possibility; that after extirpation the cyst should be opened and if papillary growths are found cancer is almost a certainty. Then panhysterectomy should be done if at all possible. To do less deprives the patient of her 25 per cent chance to recover.

8. Lynch, F. W.: Clinical Review of 110 Cases of Ovarian Carcinoma, *Am. J. Obst. & Gynec.* 32: 753-777 (November) 1936.

9. Pemberton, F. A.: Carcinoma of the Ovary, *Am. J. Obst. & Gynec.* 40: 751-763 (November) 1940.

10. Meigs, J. V.: Carcinoma of the Ovary, *Surg. Gynec. & Obst.* 245 ((July) 1939.

Early diagnosis is essential and can be done only by preventive examinations, at least yearly, since these tumors are silent in their early growth.

CONCLUSIONS

1. Cancer of the female reproductive organs is discussed with reference to 179 cases seen in the Hillman tumor clinic in the last three years.

2. Cancer of the external genitalia is most frequent in the older woman. It is best treated by resection of the iliac and inguinal lymph glands and vulvectomy at two stages. The curability should be about three in five cases. Adequate therapy to benign lesions of the external genitalia would reduce our cases 50 per cent.

3. Cancer of the cervix accounts for 85 per cent of all female cancers. Approximately 350 cases die in Alabama each year. In indigent patients only 30 per cent have the disease limited to the cervix clinically when first seen. This group accounts for 50 to 60 per cent of the five-year survivals. Seventy per cent are advanced when first seen and offer little or no hope for a cure. People are slow to seek medical aid long after symptoms have developed. Adequate prophylactic treatment of benign cervical lesions would save approximately 100 to 150 women from cancer each year in Alabama.

4. Cancer of the fundus is most common after the menopause. The disease progresses slowly and tends to metastasize late. Thorough irradiation followed by panhysterectomy should cure approximately three out of four cases.

5. Cancer of the ovary accounts for 8 or 9 per cent of female cancers. So insidious is its early progress that 40 per cent show metastasis when symptoms first develop. Panhysterectomy is the only treatment of curative value and only two or three out of ten can be expected to survive five years.

6. The delay from the time of symptom-onset until the patient presents herself to the doctor in our series averaged 8.2 months for the cervix, 14 months for the uterus, 18 months for the vulva, and 10 months for the ovary. This long delay indicates the urgent need for continued cancer education of the laity.

7. Since symptoms are often absent in curable stages, the only way to make an early diagnosis is by periodic examinations of all women between 30 and 60 years of age.

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ASSOCIATION OF GALLBLADDER AND CORONARY DISEASE

"It has long been known that a striking improvement in the symptoms of coronary insufficiency (angina pectoris) may follow the removal of a diseased gallbladder. Babcock was among the first to recognize this apparent relationship, and he, among others, believed that cholecystitis could in some instances even cause heart disease and, occasionally, congestive failure. Mayo and Straus and Hamburger have reported (and we too have observed) subsidence of certain cardiac arrhythmias after the removal or drainage of a troublesome gallbladder, and Osler was of the opinion that patients might die of cardiac standstill during severe biliary colic. Further evidence of the possible deleterious effects of disease of the gallbladder upon the function of the heart has been recorded electrocardiographically by Fitz-Hugh and Walferth. In six patients with symptoms suggestive of coronary insufficiency and abnormal (inverted) T waves in the electrocardiogram, the removal of gall stones was followed by an improvement in the cardiac symptoms and a return of the T waves to the upright position."

The above are the opening sentences of the recently published article by Walsh,

Bland, Taquine and White¹ in which they consider the association of gallbladder disease and of peptic ulcer with coronary disease. The authors studied the protocols of 2,737 complete autopsies on persons 20 years, or more, of age, between 1925 and 1938. Their conclusions, in part, are that

"1. Gallbladder disease occurred almost twice as often in patients with coronary disease as in those with normal coronary arteries. Some factor or factors related, in part at least, to an aging process but as yet not definitely elucidated are apparently responsible for this finding.

"2. There was no indication of a significant association of peptic ulcer and coronary disease in the same person."

The gradually unfolding picture of coronary disease continues increasingly to intrigue the profession and probably more study and consideration is given to this subject now than ever before. And a review of a very large number of autopsies extending over a period of many years is a fine contribution to this study. The Boston investigators have covered the ground thoroughly and have approached their subject with an open mind. They further state that "in accord with clinical observation, gallbladder disease occurred in this post-mortem study more often in women (22 per cent) and, as was also to be expected, the reverse was true with regard to the incidence of coronary disease, which was present in 37 per cent of the males as compared to 24 per cent of the females. . ."

It begins to appear as though there is a definite but poorly understood connection between biliary and coronary disease. And much time will probably elapse before this obscure interrelationship can be satisfactorily cleared up, but studies such as those of the Boston investigators are certainly a means to this end.

In connection with this editorial, the reader will likely want to peruse the paper by Wilson, in this number of the Journal, entitled "The Differential Diagnosis of Heart and Upper Abdominal Disease."

1. Walsh, Bernard G.; Bland, Edward F.; Taquine, Alberto C., and White, Paul D.: The Association of Gall Bladder Disease and of Peptic Ulcer with Coronary Disease: A Post-Mortem Study, American Heart Journal 21: 689 (June) 1941.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

DEFERRED STATUS OF MEDICAL STUDENTS, INTERNES AND RESIDENTS

Contributed by

FRED W. WILKERSON, M. D.

Editor in Chief of The Journal, and Member of
the State Board of Censors

It will be recalled that at the last annual meeting of the Association held in Mobile in April 1941, the State Board of Censors, after giving careful consideration to the important matter of the deferment of medical students by draft boards, submitted the following comments and resolution to the Association; these were unanimously approved:

"The Selective Service Act does not provide for blanket deferment of any particular group, although it does provide deferment for any person necessary to the national health, safety and interest.

"It is difficult for the average citizen to visualize what an indispensable part the trained physician plays in the National Defense Program, civilian and military, and that a period of at least five years of intensive and continuous training after graduation from college is required to produce a finished product in medicine. At present, no one can foresee to what extremity the medical needs may extend in this emergency. Wisdom prompts that those responsible for the administration of the Selective Service Act permit no serious interruption to the flow of youths through the recognized institutions for medical teaching in order to adequately meet these needs. In making such provision for draftees falling within this group, no thought should be entertained either by the draft boards or by the individual that exemption or immunity to military service is granted; but merely deferment for purposes of enhancing such individual's efficiency for a particular type of much needed service. In the light of past experiences, both in this and other countries, the Board, at a called meeting held in Montgomery, March 6, 1941, unanimously adopted the following resolution and now recommends its approval by the Association:

'Resolved, That it is the considered opinion of the State Board of Censors of The Medical Association of the State of Alabama that the future health needs and proper medical care of the nation and of the defense forces require that there be no interruption in the stream of adequately trained physicians. To that end this Board urges that local draft and appeal boards carefully and sympathetically consider deferment of medical students and internes on an individual basis as provided in the Selective Service Regulations for

periods of six months until the completion of their professional preparation, in order to insure an adequate number of well trained physicians for the national needs of the future; and be it further

'Resolved, That local draft and appeal boards, when considering medical and dental draftees for military service, be urgently requested to give due and proper consideration to the needs of their respective communities for such professional service, to the end that the citizens of our rural sections and small towns be not deprived of necessary health and medical services; and be it further

'Resolved, That copies of this resolution be sent to the Governor of Alabama, Directors of the Federal and State Selective Service Systems and to all local draft and appeal boards within the State.' "

In the October 18, 1941 issue of The Journal of the American Medical Association appears a most timely editorial entitled "Deferment of Medical Students, Internes and Residents," in which it is pointed out that these groups, for which every effort has been put forth to see that their medical training was carried through to completion, have been, seemingly, both indifferent and irresponsible in the matter of their own obligations in an all out national defense program of totally unpredictable duration. The editorial is reproduced in full below, with the hope that all young Alabamians now training for medical careers, as well as those elsewhere, will promptly take the steps suggested in this editorial, to the end that, when the appointed time comes, no one of them may be found lacking in that service of patriotism always characteristic of the members of the medical profession. The editorial above referred to follows:

"When it became apparent in June 1940 that the medical profession would be required to provide the Army, the Navy and the Public Health Service with a considerable number of physicians to meet the needs of the preparedness campaign, medical leaders with foresight urged the deferment of medical students and internes who might be called up under the Selective Service Act. Almost every agency connected with medical education took an interest in the problem. Eventually, as has been previously published in The Journal, arrangements were made to defer medical students and internes. Moreover, opportunity was provided for official enrollment of junior and senior students in the War Department Re-

serve Pool, thus permitting them to continue their education and making them available for military service as medical officers after their medical education and internship had been completed. Unfortunately, a relatively small percentage of the medical students in the junior and senior years have accepted appointment to the Medical Administrative Corps, which would make them available in the War Department's Reserve Pool. As a result, a situation impends which is giving the Offices of the Surgeon Generals of the Army and Navy great concern. Obviously, they must plan for a continuous supply of medical officers for at least the five year program contemplated by the Selective Service Act.

"If the young men who are attending the medical colleges at this time persist in avoiding military service the Army will not have the medical personnel that is required. The folly of the medical students who have failed to avail themselves of the opportunity offered to them is so obvious as to cause wonderment. At any time, under the Selective Service Act, deferment could be discontinued. If the needs of the Army demand such discontinuance, every medical graduate could be called at the moment he graduates or before. The present situation in which medical students are permitted to have continuity of medical education and internship before being called into military service was achieved only with immense effort and by favorable consideration on the part of representatives of the Army, the Navy, the Public Health Service, the Health and Medical Committees, the Committee on Medical Preparedness, the Association of American Medical Colleges and innumerable other agencies working with the National Selective Service. The representatives of the National Selective Service, including the director and his medical advisory staff, have had utmost sympathy with the importance of deferment of medical students so as to provide continuity of medical education. So far as we can learn, not more than four or five students in good standing in medical schools of repute in this country have been inducted into the military service.

"Now the failure of the student to cooperate as he should may bring about a situation in which all of the planning will be put to naught. Failure of students to apply for commissions as second lieutenants in the Medical Administrative Corps or as ensigns in the Navy may place on the deans of medical schools the responsibility for their actions, so that deans will be compelled to discontinue recommendations for deferment for junior and senior students. Moreover, internes and residents constitute the pool from which the Army must expect to draw replacements for medical officers in the next two years. If these groups do not come into the reserve corps, medical reserve officers now in the Army will be held for prolonged service. Here a responsibility rests on superintendents of hospitals. Deferment of residents or internes beyond one year should not be requested unless the physician concerned cannot be replaced and unless his withdrawal would be a serious handicap to the service of the institution.

"An appeal to the patriotism of the medical student should in itself be sufficient to cause promptly a favorable response. Always it has been the proud boast of the medical profession in the United States that it was never found lacking when the nation called. In every conflict in which our nation has been engaged, thousands of physicians have rushed to be among the first to give of their services. The preparedness of the nation is vital to its future safety. The threat that a display of lack of patriotism will result in prompt action by the government in discontinuing deferment should make even the unpatriotic see the logic of offering the fullest possible cooperation by enrollment in the War Department's Reserve Pool at this time."

Committee Contributions

Maternal and Infant Welfare

VITAMIN K AS PROPHYLACTIC AGAINST HEMORRHAGE IN THE NEW BORN

Although the evidence for the use of vitamin K for the prevention of hemorrhagic disease of the newborn infant points out its value with unmistakable clarity, the employment of this substance is still far too limited. This is particularly true of its prophylactic use. Once hemorrhage has occurred, intracranial bleeding may already have caused irreparable damage and use of this factor at such a time is of little value.

Autopsy studies often reveal small lacerations within the cranium which under ordinary circumstances seem to be entirely without harmful effect. However, when the infant develops hemorrhagic tendencies around the second or third day, these may be the source of an intracranial hemorrhage without the presence of other external manifestations of hemorrhagic disease. The mortality rate from such hemorrhage is not known but probably is higher than might be supposed and particularly so in the premature infant. It has been quite clearly demonstrated that all infants manifest a more or less physiologic hypoprothrombinemia from the second to the sixth day of life. This hypoprothrombinemia may reach a critical level and when this occurs hemorrhage follows. It has also been demonstrated that this drop in prothrombin level is more pronounced in the premature infant and this may help to account for the frequency with which intracranial hemorrhage complicates prematurity.

In a recent study, Beck, Taylor and Colburn¹ used a series of 1,037 controls. In this group, hemorrhagic conditions were observed in twenty-one infants. Of these, fourteen or 67 per cent had intracranial hemorrhages, one of which was accompanied by hemorrhage into the adrenal. The remaining seven or 33 per cent had bloody stools. In another group of 1,022 cases, the mothers were given 2 milligrams of 2-methyl-1, 4-napthoquinone (thyloquinone). In this group hemorrhagic conditions occurred in only five infants. Thus, the use of a vitamin K preparation during labor reduced the incidence of hemorrhage in the newborn infant approximately seventy-five per cent. Although dosage has not been standardized, these authors, on the basis of their investigations, now give all mothers 2 milligrams of the vitamin K preparation at the time of admission and are repeating the dose at six-hour intervals throughout labor. Because of the greater tendency to diminished clotting activity in prematurely born infants, the 2 milligram-dose is repeated at four-hour intervals in all premature labors.

This preparation is now widely available, is inexpensive, and may be given orally to the mother during early labor. Its use, therefore, should become more widespread and is of particular value in premature labor.

Prevention of Cancer

CANCER OF THE LUNG

Cancer of the lung is usually secondary to cancer elsewhere in the body. About ten per cent of the cases of carcinoma of the lung are primary. Primary carcinoma of the lung is a relatively common disease, accounting for from five per cent to ten per cent of all cancers. It is steadily increasing in frequency both relatively and absolutely. It is about five times as common in men as in women.

Most of the primary carcinomas of the lung are of the squamous cell type of varying degrees of malignancy. They tend to spread widely by direct extension to the pleura, pericardium and heart; and by me-

tastasis to the liver, kidneys, adrenals, brain, bones and the other lung.

There is a great variation in symptomatology depending upon the point of origin of the tumor. The symptoms are cough, which is persistent and may be dry or productive of hemoptysis or foul sputum; pain in the chest, shoulder or epigastrium; dyspnea and cyanosis. Dyspnea in the absence of cardiac disease and associated with cough and pain should always suggest the possibility of pulmonary neoplasm. *Persistent cough or pain in the chest, especially in persons over fifty, demands an investigation for tumor.* There may be a pleural effusion or atelectasis.

Diagnosis is suggested by x-ray of the chest and confirmed by microscopic examination of tissue, usually obtained by biopsy through a bronchoscope or which may be present in the sputum or centrifuged sediment of pleural effusion fluid. Exploratory thoracotomy is occasionally justified to establish a diagnosis when other means have failed. The Cancer Manual of the Committee on Cancer Control may be consulted for a differential diagnosis.

Recent advances in thoracic surgery have somewhat improved the outlook for this otherwise hopeless group of cases. Excision of a lobe or the entire lung is the treatment of choice for well localized lesions not too near the hilum. Unfortunately, the great majority of cases are not recognized early enough to be operable. The average duration of life without surgery is about one year. Here, as with cancer elsewhere, the need for early diagnosis is obvious. Cure cannot be expected from present radiation methods. It may accomplish palliation and rest. It may cause regression of the lesion with relief of pressure symptoms. It occasionally makes an inoperable cancer operable. Even in expert hands three-year arrests can be expected in less than ten per cent of cases.

Tuberculin Reaction—Doctors, nurses, attendants, and students who are tuberculin-positive need not fear tuberculosis because of their work.

A tuberculosis patient is not a source of infection for adults of his family who are tuberculin-positive reactors.

In hospitals and sanatoria there is no evidence that tuberculous patients infect one another. An ex-patient may be employed by a tuberculous hospital with safety to himself as far as activating his own lesion or acquiring new infection is concerned.—*Brahdy, Am. J. Pub. Health, Oct. '41.*

1. Beck, A. C.; Taylor, E. S., and Colburn, R. F.: Vitamin K Administered to the Mother During Labor as a Prophylaxis Against Hemorrhage in the Newborn Infant, *Am. J. Obst. & Gynec.* 41: 765, 1941.

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

SPECIMENS EXAMINED

AUGUST 1941

Examinations for diphtheria bacilli and Vincent's	860
Agglutination tests (typhoid, Brill's, undulant fever, etc.)	1,275
Typhoid cultures (blood, feces and urine)	1,750
Examinations for malaria	2,928
Examinations for intestinal parasites	3,251
Serologic tests for syphilis (blood and spinal fluid)	30,952
Darkfield examinations	48
Examinations for gonococci	2,417
Examinations for tubercle bacilli	1,758
Examinations for Negri bodies (microscopic)	50
Water examinations (bacteriologic)	1,052
Milk examinations	1,951
Pneumococcus typing	8
Miscellaneous	1,066
Total	49,366

FANNIE MAE FRANK

Fannie Mae Frank, senior serologist in the Bureau of Laboratories of the Alabama State Department of Health, died October 6th as the result of injuries received the previous day in an automobile accident. Mrs. Frank was originally from Tennessee, having been born in Murphreesboro, where she obtained her early education. Her undergraduate collegiate work was done at Brenau College in Gainesville, Georgia, from which she graduated with an A. B. degree and at George Peabody College in Nashville where she obtained the degree of Bachelor of Science. Subsequently, Mrs. Frank pursued postgraduate studies at Vanderbilt and Johns Hopkins Universities, and took special work in serology in the laboratories of Dr. John A. Kolmer, in Philadelphia, and Dr. Reuben L. Kahn at Ann Arbor, Michigan.

Before becoming associated with the laboratories of the Alabama State Department of Health in 1924 Mrs. Frank had worked in the Department of Pathology at Vanderbilt University and in the City Health Department in Nashville. In 1916-17 she was engaged in war work in Washington, D. C.

For some years past Mrs. Frank had been directly in charge of the serologic division

of the Central Laboratory. For this work she was specially fitted both by inclination and training and to it she gave unstinted effort. Trained in the technique of her specialty in the laboratories of the author-serologists she was meticulous in adherence to the details of her tests and was notably successful in imparting this point of view to the many student-technicians coming under her influence. Her place on the laboratory staff will indeed be difficult to fill.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

MARY STANTON PUGH

Mary Stanton Pugh, senior tuberculosis nurse on the staff of the State Department of Health, died October 5th as the result of an automobile accident. Miss Pugh had been associated with the tuberculosis work of the department since 1930, either in her most recent capacity or in the field studies carried out by the Rockefeller Foundation in Lee County.

A native of Montgomery, Miss Pugh obtained her early education there. She also attended the University of Alabama for a time. Her nursing education was obtained at the Staten Island Hospital, New York; and postgraduate studies at Columbia University rounded out her education.

Miss Pugh was associated with the first diagnostic program in tuberculosis inaugurated by the State Health Department and many of the procedures followed today came from her observations. It will be difficult indeed to find a replacement for her.

EARLY SYPHILIS

A colored female, married, was admitted to one of the venereal disease clinics with a vulval lesion. Serum from the lesion showed *Treponema pallidum* by darkfield examination and the Kahn test was positive. Treatment was begun, and within a week's time the husband presented himself to the clinic with a penile lesion. The question was raised: "Should treatment be begun immediately on the husband on suspicion only or should the diagnosis be established by the

supporting evidence of a positive Kahn or a positive darkfield examination or both before any treatment was given?" Although the wife had syphilis there is no positive proof, except by circumstantial evidence, that the husband had syphilis. Proof must be forthcoming and the only method of proving the infection is the positive Kahn test or positive darkfield or both. To begin treatment without proof is doing the patient an injustice. He might or might not have syphilis.

There is one other point to consider and that is the medicolegal angle. If the husband should bring a divorce suit against his wife and the physician had to testify, it would be extremely difficult to prove the husband's infection since the diagnosis was made by inference and clinical appearances only.

BUREAU OF HYGIENE AND NURSING
B. F. Austin, M. D., Director
PREMATURITY

AN IMPORTANT FACTOR IN INFANT MORTALITY

Prematurity is the chief cause of death of all infants under one year of age. Over a thousand babies are dying in Alabama every year as a consequence of it.

FIVE PRINCIPAL CAUSES OF DEATH DURING INFANCY		
5-YEAR AVERAGE—1935 THROUGH 1939		
	1st day	*Mean Rate
All causes.....	1,052	17.1
Premature birth.....	653	10.6
Injury at birth.....	87	1.4
Congenital malformations.....	45	0.7
Other causes peculiar to early infancy.....	31	0.5
Congenital debility.....	27	0.4
	1st month	
All causes.....	2,253	36.6
Premature birth.....	1,012	16.4
Injury at birth.....	179	2.9
Congenital malformations.....	117	1.9
Other diseases peculiar to early infancy.....	103	1.7
Respiratory diseases.....	99	1.6
	1st year	
All causes.....	3,850	62.4
Premature birth.....	1,050	17.0
Pneumonia.....	397	6.4
Diarrhea and enteritis.....	316	5.1
Injury at birth.....	183	3.0
Congenital malformations.....	175	2.8

*Infant death rates per 1,000 live births.

This five-year study shows that, of babies born prematurely, approximately 62 per cent die within the first twenty-hour hours of birth and 96 per cent of the deaths occur under one month of age. It has been estimated that about five per cent of all infants born alive are born prematurely. Many premature births could be prevented if all expectant mothers had adequate prenatal care. Women must be taught the importance of seeking medical attention early and seeing their physicians periodically throughout their pregnancy.

A premature birth is an emergency condition and should be recognized as such by the attending physician. We must be prepared to meet the emergency if we are going to save more babies. Having everything ready for receiving the baby at the time of its birth may mean saving its life. For this reason plans are under way whereby we hope to have at least two to four additional incubators and 1 or 2 emergency kits for premature births in every county of the state, the incubators and kits to be made available for use by physicians at all times.

A study is soon to be made of the hospitals over the state and where facilities are adequate we hope in the future to be able to hospitalize the indigent cases when hospitalization is indicated. A nurse who has had special training in the care of premature infants has recently been added to the staff of the Division of Hygiene and Nursing. Her services will be available to any hospital or group of nurses desiring to learn more concerning the care of premature babies and the planning of an adequate nursery for prematures and newborn infants. It is hoped that the births of all premature infants will be reported immediately to county health departments so that a public health nurse will be able to render a greater service to the attending physician and to the families who are responsible for the care of these babies.

B. M. B.

Pneumonia Control—Modern therapy now offers us two effective ways of fighting pneumonia. In serum therapy, we inject into the blood stream of the patient an adequate amount of type-specific immune antibodies previously developed in animals; these, in a few hours, destroy the pneumococci and terminate the disease before any serious functional or structural damage to the body is done. With chemotherapy, we inhibit the growth of the organism in the body.—*Kopecky, Texas State J. Med., Oct. '41.*

BUREAU OF SANITATION

D. S. Abell, M. S. in S. E., Director

COUNTY FOOD SANITATION PROGRAMS**THEIR PLANNING AND ORGANIZATION**

Contributed By

E. M. Yohn, Senior Sanitarian

The principal duties of a county sanitation officer include inspection of food establishments and dairies, if they are under supervision; general and rural sanitation, including private and semipublic water supplies; mosquito control, including screening; school sanitation, investigation of nuisance complaints, and public health education.

There is enough work in every county to keep one or more sanitation officers busy every day. In order to accomplish the maximum it is very important to have a planned program. To intelligently plan a program, the work to be done must be fully analyzed. This is probably the most important problem the sanitation officer has. The county health officer is responsible for the program and activities of the county health department personnel. Therefore, program planning by the sanitation officer should be done with the health officer and the final plans should be approved by him.

The first requisite in planning a program is to accumulate adequate data or information regarding the county. It is well for a new sanitation officer to make a personal survey of at least certain establishments, such as dairies, schools and food establishments. Two county maps should be secured which show all roads, as well as incorporated and important unincorporated communities. Dairies, schools, food establishments and barber shops should be spotted on one of these maps, except that in the larger cities it may be necessary to indicate only the number of food establishments and barber shops. Approved rural sanitation, ponds and other items should be spotted on the second map. In addition, the total population and area of the county should be learned, together with the population of each incorporated community, the percentage of homes sanitated in each, number and percentage of schools sanitated, and number of school cafeterias. Information should also be procured from the health officer regarding the incidence of the diseases which are influenced by sanitation, together with

their foci if they are more prevalent in certain communities or areas than in others.

When the above information is assembled, the sanitation officer, together with the health officer, can determine largely what sanitation needs are most urgent in the county and where they are most needed. They can also estimate how much of each type of sanitation is needed, and will know how many food establishments, dairies and other establishments are to be supervised. After all this information has been assembled and evaluated, an estimate of the time needed for each type of sanitation work can be made. In calculating the time needed for inspection, an average of 10 to 12 food inspections per day in rural counties and 12 to 18 in cities, or 8 dairies, is a reasonable one where nothing but inspections are done for a day, and after a program is under way and most of the construction is completed. At the start of either a food or milk sanitation program, when much time will be needed for discussing construction or remodeling, these figures should be reduced by $1/3$ to $1/2$ for the first 3 or 4 months.

After a tentative allotment of time to be devoted to each activity has been made, this does not mean that just that many full days each month should be spent on food establishment inspection, privy construction or dairy inspection. Much time and travel can be saved by mixing the work. It will be necessary at times to drive to some distant part of the county to check privy construction or to do some promotional work that will not require all day. The remainder of the day may be utilized on inspections in that part of the county. It is not good economy from a time or travel standpoint to do only one type of inspection during the day, especially in a rural county. A supply of the various inspection forms and regulations should always be carried in a brief case so that inspections can be made on any or all types of establishments in a community on the same day. At certain seasons of the year it will be necessary or desirable to concentrate more on one phase of the work, such as mosquito control, than on another.

Education is the basis on which progress must be made. The owners and operators of establishments must be educated regarding the regulations governing their establishments, together with the reason for the requirements. Probably the best method of

educating proprietors and employees of food establishments and dairies is through personal demonstration. This can be done while explaining the regulations and violations noted during routine inspections. This may result in a smaller number of inspections per day, but it is time well spent since results and not numbers of inspections are the goal for which we are striving.

An educated public makes the work of a sanitation officer much easier and more effective. The public can be educated by lectures at luncheons, club meetings and schools; through the distribution of literature, including annual reports; by newspaper articles, and by posting score cards in conspicuous places in food establishments. Also, keeping the maps and wall chart in the health office up to date and displayed offers an opportunity for individual educational talks to persons who come to the office.

The sanitation officer's place in the county health organization is a very important one. His responsibilities are both numerous and great. He should take pride in his work. Every inspection should be made in a manner that will command the respect and approval of everyone concerned and reflect dignity upon his work. Superficial and incomplete inspections encourage carelessness on the part of operators. They also tend to destroy the respect which the public has for inspection, and thus reduce the support of the public.

The purpose of food-establishment and dairy supervision is to provide clean, wholesome foods and to guard against the spread of communicable diseases through these foods. Education is the basis of these programs. However, regulations or laws are necessary, not only as a guide to the conscientious operator but also to protect the consumer against sale of potentially dangerous foods by indifferent or careless operators. Therefore, at times, a sanitation officer must act as a law enforcement officer. Exercise of this authority should not be resorted to hastily. A threat of invoking the penalties of the law or regulations usually should not be used until all reasonable efforts at education and persuasion have been tried. When it becomes necessary for a sanitation officer to employ law enforcement methods, he should first make sure that he has fully complied with the regula-

tions with regard to legal notices, complete records, etc., in order to make a sound case. Since the health officer is made responsible for the enforcement of the regulations, he should be consulted before legal action is taken. The health officer should carefully check and review the records and steps leading up to the case and advise or procure legal advice for the sanitation officer in order that the case may be legally sound when it reaches court. He should also give the sanitation officer his complete support, once it is agreed to take legal action. There is nothing that destroys the morale of an inspector so quickly or completely or that destroys his effectiveness in dealing with operators as much as having his health officer fail to support him in a prosecution or denial of a permit when this becomes necessary; or to permit an establishment to reopen before the regulations or the inspector's instructions have been fully complied with. One such incident usually becomes known to all operators. The careless or indifferent ones who most need strict supervision conclude that the inspector has no authority or support from his health officer and that they do not have to pay any attention to the inspector's instructions.

Since October 1, 1937, when the new food regulations went into effect, it has been the duty of the district inspectors (senior sanitarians) to make surveys in the counties having sanitation officers and to prepare an appraisal of the sanitation officer's food control activity and efficiency. These surveys and appraisals should be of particular value to both the sanitation officer and the health officer. If one or more items of Section 2 are frequently checked by the district inspector, this indicates either that the interpretation of the requirement is wrong or that for some reason enforcement is lax. Low scores on the district inspector's inspection reports show which establishments employ poor methods and these should receive special attention. Scores of the district inspector which are materially lower than those given by the sanitation officer on simultaneous inspections should be given special attention by the health officer since they indicate conclusively that the sanitation officer is either wrong in his interpretation of the requirements or too lax in making inspections. Either leads to poor enforcement.

The appraisal of the sanitation officer's food control activities and of his efficiency is made largely from the records in the office and from observations at the time of the survey. It is somewhat in the nature of an inventory of the sanitation officer's records and work made for the health officer. In fact, both the rating and appraisal are intended to point out periodically both the good and weak points of the food control program for use in planning improvements. If they are not studied by the health officer and his sanitation officer, and if no steps are taken by either to alter the program to correct the deficiencies shown, they are largely valueless.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1941		
	August	Sept.	Estimated Expectancy Sept.
Typhoid	33	38	74
Typhus	44	43	42
Malaria	892	1011	1320
Smallpox	0	0	1
Measles	50	66	20
Scarlet fever	62	74	86
Whooping cough	77	66	77
Diphtheria	57	112	178
Influenza	39	17	76
Mumps	21	23	23
Poliomyelitis	353	194	7
Encephalitis	0	3	3
Chickenpox	5	2	7
Tetanus	4	3	5
Tuberculosis	262	232	237
Pellagra	10	11	32
Meningitis	4	2	5
Pneumonia	82	41	73
Ophthalmia neonatorum	4	4	1
Trachoma	0	1	0
Tularemia	2	0	0
Undulant fever	4	4	6
Dengue	1	0	0
Amebic dysentery	6	1	0
Cancer	167	168	0
Rabies—Human cases	0	0	0
Positive animal heads	14	12	---

*As reported by physicians and including deaths not reported as cases.
The Estimated Expectancy represents the median incidence of the past nine years.

Woman's Auxiliary

Mrs. F. C. Smith, Chairman
Press and Publicity Committee

The work in the interest of British medical and surgical relief in Alabama has just started with the fall meetings of the individual Auxiliaries. Those to whom this work has been presented were enthusiastic from the start, and already the Chairman,

Mrs. N. T. Davie, has had some response to requests for old instruments and drug samples. The State Auxiliary was requested to sponsor this movement by Dr. J. M. Mason, President of the State Medical Association. The subject is dealt with further in a succeeding paragraph, contributed by Mrs. Davie.

* * *

The Bessemer Medical Auxiliary held its first meeting of the fall on October 8th with Mrs. C. A. Harris and Mrs. F. C. Smith as hostesses. After the luncheon a business meeting was held. A contribution was made to the Community Chest, and all members agreed to bring old medical instruments to the next meeting. Officers for the new year are: President, Mrs. C. A. Harris; 1st. Vice-President, Mrs. S. W. Wright; 2nd. Vice-President, Mrs. F. C. Smith; 3rd. Vice-President, Mrs. L. E. Peacock; Secretary, Mrs. E. P. McEniry; Treasurer, Mrs. G. W. Williamson; Historian, Mrs. C. J. Colquitt; and Reporter, Mrs. A. E. Orton.

* * *

"Every Doctor's Wife in Health Defense" is the slogan adopted by the National Chairman of Organization, Mrs. John L. Bauer. We hear much in these turbulent times about defense and our own need of aiding the countries at war in whatever way we can. There are many organizations giving aid in many ways but we, as doctors' wives, are being urged to help from the standpoint of medical and surgical relief.

This movement was started in August 1940 by Mrs. Roger Bascom and Doctors S. L. Craig, Carnes Weeks and Conrad Berens, when they appealed to the physicians of New York City to join in a national campaign "for surgical and medical supplies to equip emergency stations and field hospitals for the benefit of civilian casualties in the hostilities abroad."

Dr. J. M. Mason, President of the State Medical Association has accepted membership on this national committee and has appealed to the Woman's Auxiliary to the Association to conduct a drive in Alabama for the medical and surgical supplies requested by this committee.

The Auxiliaries, as a group, and the individual doctors' wives, can and are being urged to collect samples of medicines not being used by physicians, as well as dis-

carded surgical instruments in whatever state of repair.

The chairman of this committee in the State Auxiliary is Mrs. N. T. Davie, 1026 Forest Lane, Anniston, who will be glad to hear from any one wishing to cooperate in this work. Dr. Mason has sounded the call. He needs our help. Let us not fail him.

Book Abstract and Reviews

Abdominal Surgery of Infancy and Childhood: By William E. Ladd, M. D., F. A. C. S., Professor of Child Surgery at Harvard Medical School; Chief of Surgical Service, The Children's Hospital, Boston; and Robert E. Gross, M. D., Associate in Surgery, Harvard Medical School; Associate Visiting Surgeon, The Children's Hospital; Associate in Surgery, The Peter Bent Brigham Hospital, Boston. Cloth. Price, \$10.00. Pp. 455, with 268 illustrations. Philadelphia and London: W. B. Saunders Company, 1941.

Since it is impossible for the vast majority of surgeons to limit their practice to surgery of infancy and childhood, this book, written by outstanding men who are in a position to so limit their work, should be of general interest. The reviewer knows of no other source where so much valuable information relative to this subject can be secured in such a condensed volume. As would be expected, a large part of the book deals with congenital anomalies and their sequelae as these are most likely to cause symptoms in early life. The common everyday diseases are likewise well covered and all the recent advances in chemotherapy are included. It is interesting to note that these authors still advocate drainage of the peritoneal cavity in most types of peritonitis. Anyone doing general surgery is frequently confronted with problems in the young, and these problems are often somewhat different than in adults. It would seem that this is a book to be read in detail by all surgeons. It is a book which has to be read closely and kept handy for reference as there is entirely too much valuable information to absorb in one reading.

J. L. B.

Clinical Immunology, Biotherapy and Chemotherapy in the Diagnosis, Prevention and Treatment of Disease. By John A. Kolmer, M. S., M. D., Dr. P. H., Sc. D., LL. D., L. H. D., F. A. C. P., Professor of Medicine, Temple University School of Medicine; Director of the Research Institute of Cutaneous Medicine; and Louis Tuft, M. D., Assistant Professor of Medicine and Chief of Clinic of Allergy and Applied Immunology, Temple University School of Medicine. Cloth. Price, \$10.00. Pp. 941, with 27 illustrations, including 11 color plates. Philadelphia and London: W. B. Saunders Company, 1941.

The authors of this volume are well known by readers of medical literature. Dr. Kolmer has written a textbook on immunology and on laboratory technique. Dr. Tuft has written a very excellent volume on clinical allergy. In this present volume the authors have brought together the advances in immunology, biotherapy and chemotherapy that have occurred during the past fifteen years, a period filled with scientific accomplishments, the outstanding one being the discovery of the sulfonamide drugs. The first part of the

book deals with the mechanism of infection and the various phases of immunity, such as antibody formation, phagocytosis, antitoxins, allergy, methods of immunization, nonspecific protein therapy and chemotherapy. The latter section clarifies many of the mysteries as to how drugs attack specific organisms. Paul Ehrlich would have been happy if he had lived to see his theory of a "magic bullet" borne out by recent advances in specific chemotherapy. This part of the book is of greatest value to the medical student but will appeal also to those practitioners who insist upon knowing the theory as to why certain procedures are effective in medical treatment.

The second part of the book is devoted to individual diseases and their treatment by both immunologic and chemotherapeutic measures. In the treatment of the coccus infections the sulfonamide drugs are of outstanding value but do not entirely displace serum in the treatment of pneumonia. In the treatment of diseases caused by toxins, immunologic serum in the form of antitoxins is of greatest value. In the case of the Rickettsial diseases there is no known specific therapy, while in some of the virus diseases, such as trachoma and lymphogranuloma inguinale, the sulfonamide drugs are of great value. In the treatment of syphilis and the other spirochetal diseases, modifications of salvarsan and various bismuth compounds are still the most effective treatment. The authors have combed medical literature for statistical reports to illustrate the effectiveness of various methods discussed and have given a most accurate evaluation of the various therapeutic materials that have been mentioned.

The chapter on allergic diseases is too brief to be of value to the specialist and is lacking in detail from the point of view of the uninitiated. On the whole, this book is one of the outstanding books of the year and can not be recommended too highly.

C. K. W.

Cardiac Clinics. By Fredrich A. Willius, B. S., M. D., M. S. in Medicine; Head of Section on Cardiology, Mayo Clinic; Professor of Medicine, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, Rochester, Minnesota. Cloth. Price, \$4.00. Pp. 276, illustrated. St. Louis: The C. V. Mosby Company, 1941.

This book is a collection of informal discussions on heart diseases presented by Dr. Willius and published previously in the proceedings of the staff meetings of the Mayo Clinic. The discussions were prepared primarily for busy practitioners who have too little time for detailed study, yet who must be well informed in the practical aspects of every field of medicine. The author has succeeded in coordinating advances in medical science with the practical aspects of medical practice.

Each chapter presents a case history, followed by a discussion, notes on the subsequent treatment of the case, and frequently the postmortem findings. Each chapter deals with one particular type of heart disease, such as pericarditis, rheumatic heart disease, bacterial endocarditis, cardio-

vascular syphilis, hypertensive heart disease, coronary disease, the thyroid heart, congenital heart disease, functional heart disease, and the arrhythmias.

This book is not intended to be a textbook on cardiology or a reference work. It is simply a group of case reports intended to bring out certain advances in the field of cardiology or to remind the reader of certain aspects that he might have overlooked. It is a book for leisurely reading, as one would read an essay. It can hardly be considered the "meat of practice" but is rather "the sauce that gives it flavor."

C. K. W.

Sulfanilamide and Related Compounds in General Practice. By Wesley W. Spink, M. D., Associate Professor of Medicine, University of Minnesota Medical School. Cloth. Price, \$3.00. Pp. 256, with case reports. Chicago, Illinois: The Year Book Publishers, Inc., 1941.

This volume on the sulfonamide compounds is timely and much needed since each new sulfonamide preparation is quite often considered a possible cure-all for all infections.

Each sulfonamide preparation has definite limitations to its use in medicine. Yet, each one is almost specific for certain infections. The primary action of the sulfonamides is one of bacteriostasis and there is no evidence to indicate that they interfere with the formation of antibodies. When any sulfonamide compound having a free amino group (NH_2) in the para position of the benzene ring is introduced into the human body, a portion of the drug is changed to a conjugated product by the substitution of an acetyl group (COCH_3) for one of the hydrogens in the amino (NH_2) group. These acetylated or conjugated products have no antibacterial activity. Hence, it is quite important to know in treating infections how much of the sulfonamide preparation being used is actually exerting antibacterial action. It is also necessary to know the rate of absorption and excretion if definite concentrations in the body fluids are to be maintained for varying periods of time.

Each sulfonamide preparation on the American market today is discussed in this volume. Two new ones—sulfaguanidine for the treatment of acute bacillary dysentery and sulfadiazine for pneumococcic, streptococcic, and meningococcic infections—are discussed.

To use the various sulfonamide preparations intelligently and successfully one must have a good working knowledge of their action. Hence each physician ought to have a copy of this book for reference since it is concise but packed with information.

W. H. Y. S.

Expectant Motherhood. By Nicholson J. Eastman, M. D., Professor of Obstetrics at Johns Hopkins University and Obstetrician-in-Chief at Johns Hopkins Hospital. Cloth. Price, \$1.25. Pp. 170. Boston: Little, Brown and Company, 1940.

This small, well-prepared volume provides an unusually valuable reference book for the intelligent prenatal patient. Dr. Eastman explains

in understandable fashion the processes of pregnancy, pointing out the physiologic background of many of the changes the patient observes, taking pains to give the patient a calm and sane perspective of the processes taking place within her and suggesting many things that she can do to make her period of gestation more comfortable.

Most patients who present themselves for prenatal care have very little knowledge of the changes that take place incident to pregnancy, and, so often, what little knowledge they have acquired is erroneous and of the type that conduces to worry and apprehension. Because it is almost impossible to give the patient the time needed to explain many of these things to her and correct false notions, most physicians must confine their remarks to a few fundamental things, such as diet, the answering of questions and the reassurance of the patient. If the patient will use this book, it will give her a basic view of what her physician is trying to accomplish and will make it possible to follow his advice intelligently rather than blindly. It will be to her a convenient reference book to remind her of what he said as well as a complete and comforting guidebook through her new experiences. The physician who does considerable obstetrics might do well to have a few copies of this book available for his expectant mothers.

It should more than repay him in improved, intelligent cooperation on the part of his patients.
J. N.

The 1941 Year Book of Public Health. Edited by J. C. Geiger, M. D., Dr. P. H., Director of Public Health, City and County of San Francisco; Clinical Professor of Epidemiology, University of California; Clinical Professor of Preventive Medicine and Public Health, Stanford University School of Medicine; Lecturer in Preventive Medicine and Public Health, University of Southern California Medical School. Cloth. Price, \$3.00. Pp. 544. Chicago: The Year Book Publishers, 1941.

This small handbook is a review of more than 400 of the best articles of the year on public health and related matters. The subjects cover a very large field, are carefully selected for their value and are well edited. The section on Communicable Diseases and Epidemiology uses 167 of the 544 pages in the book. This is evidence that the control of these diseases is still a major function of public health work. Private physicians as well as all public health workers will find this a valuable reference book.

J. S. H.

Deficiency States—While the diagnosis of advanced deficiency states usually is easy, the recognition of the mild or early vitamin deficiency is much more difficult. The diagnosis would obviously depend on a correct evaluation of the symptoms, signs and accessory findings in any given case, and also on the response to specific therapy. It must be pointed out, however, that improvement after vitamin therapy in such symptoms as flatulence, indigestion, weakness, nervousness and irritability does not necessarily constitute proof of a deficiency state. . . .—Ruffin, J. A. M. A., Nov. 1, '41.

Current Comment

Ninety-eight per cent of the eye injuries which occur in American industries at a rate of 1,000 a day and represent an annual loss of \$200,000,000 are wholly unnecessary, according to a study sponsored by the National Society for the Prevention of Blindness and just issued by the Columbia University Press.

"At the end of an eight-hour working day, today and every other work day, a thousand men and women in American factories, mills, mines, utilities, and other places of work will have suffered eye injuries," the study, prepared by the late Louis Resnick, staff member of the Society for twenty years, says.

Mr. Resnick's report, which was completed just three days before his death in March 1941, is based upon two decades of personal observation in workshops throughout the country. It contains a complete summary of eye hazards existing in American industry today. A pioneer in the field of industrial safety, Mr. Resnick was the first editor of the *National Safety News* and at the time of his death was industrial relations director of the National Society for the Prevention of Blindness.

"Conservation of the vision of American workmen is as vital to national defense as is the building of armament and the training of men to use defense equipment," Lewis H. Carris, director emeritus of the Society, points out in a preface to the study. "This volume not only lays bare the eye hazards present in industries and occupations of all sorts, but also reports on the measures that may be taken to eliminate these hazards and to guard workers against those which cannot be eliminated. It is the hope of the sponsors of this volume that it will serve not only as a handbook for safety engineers, safety inspectors, and all others engaged in accident prevention generally and sight conservation in particular, but also as a textbook for engineering schools, vocational training authorities, and all others engaged in preparing youth for work in industry."

Approximately 300,000 eye injuries occur in this country's factories, mills, mines and workshops every year, the study explains, and cost the employers more than \$100,000,000 annually. They cost the injured work-

men and the communities in which they live an additional \$100,000,000 yearly.

"Most of this \$200,000,000 annual loss and most of the human suffering resulting from these eye injuries—98 per cent, in the opinion of those who have made the most detailed study of the subject—are wholly unnecessary," the study finds.

"Of the 1,000 eye injuries which will occur today, all but 20 could be prevented. Conditions observed during the past twenty years in American factories, railroads, and other work places lead inevitably to the conviction that accidents are not inherent in industry, and that the dividends on investments in accident prevention may be proportionately greater than the dividends on the primary business of an industry.

"There is no need for the blinding of workers in American industry. The industrial accident and disease hazards affecting the eyes are now commonly known. Methods of eliminating these hazards or of protecting workers against them have been thoroughly demonstrated. Devices which provide protection against almost every type of eye accident are now available.

"There are in the United States today more than 80,000 persons who have lost the sight of one eye as a result of industrial hazards and close to 8,000 who have lost permanently the sight of both eyes as a result of these accidents. To this total there is probably added each year 1,000 more who lose the sight of one eye and a hundred or more persons who lose the sight of both eyes as the result of occupational hazards.

"The number of men and women who have lost permanently part of the vision of one eye or of both eyes as the result of industrial accident or health hazards undoubtedly runs into hundreds of thousands, and this total is augmented each year by a number probably in excess of 10,000.

"These are conservative estimates even if it is assumed that the records on which they are based represent a complete reporting of industrial eye injuries. We know, however, that the injuries reported are only a part of the total number of eye injuries which actually occur. In many instances the injured worker does not know he is entitled to compensation, and no one enlightens him.

"Often the seriousness of an eye injury or the fact that it has or will result in perma-

nent loss of vision does not become apparent until long after the injury has occurred, and in many such cases, for one reason or another, no official record of the accident is made. In still other cases the worker is more concerned about the security of his job than in possible compensation for an injury, and so he does not press his claim for compensation.

"More serious than all the foregoing among the factors contributing to the inadequacy of official records of eye injuries is the rapidly spreading use in industry of poisonous chemicals and other deleterious materials which cause damage to the eyes. In many instances neither the workman whose eyes have been affected nor his physician knows that the worker has been exposed to poisonous fumes, liquids or dusts.

"In many other cases damage to the eyes develops after the worker has left the employment of the company in which he, knowingly or unknowingly, worked with or near poisonous substances. In either event the true cause of blindness or of other serious damage to the eyes does not become a matter of record in the state industrial commission or in any other source of data concerning industrial injury or disease."

Of the estimated 300,000 eye injuries occurring in American industry each year, 60,000 are compensable, and cost the employers more than \$20,000,000 annually for compensation and medical care, Mr. Resnick's study reveals.

Accepting the ratio of hidden or indirect costs of industrial accidents to direct costs of compensation as four to one, the total annual cost of compensable eye accidents amounts to \$100,000,000, according to the report, which adds that all or most of this sum is ultimately paid by the consumer, the public at large.

"Some further idea of the huge financial loss resulting to employers and employees from preventable eye injuries lies in the fact that eye injuries lead to the loss of more than 53,000,000 man-hours of work yearly," the study continues.

"Little progress has been made in bringing to workmen a realization of what accidents cost them in lowered earning capacity and of the money saving they can make by doing their part in safeguarding their eyes. Few workmen, for example, realize that the maximum compensation for total loss of vi-

sion of one eye is less than \$2,000 in most states, and as low as \$1,000 in some.

"How many American workmen would be willing to sell both eyes for \$6,000 or less, the maximum compensation payable for loss of sight of both eyes in a majority of states? Few workmen realize that they are risking a 33 1/3 per cent cut in salary for the rest of their lives every time they risk an eye injury. In the most liberal states the maximum compensation paid for total loss of vision is two-thirds of the wage received by the injured workman at the time of the accident. In some states, as in Oregon, the maximum compensation for total loss of vision is as low as \$30 a month for life.

"Practically all the financial loss and the human suffering resulting from the blinding of industrial workers could be averted by the cooperation of employers and employees in the utilization of demonstrated methods of preventing accidents and diseases. Not only would these losses be averted but also efficiency and the earnings of both employers and employees would be substantially increased if all industry did what is being done successfully in a few plants in America to prevent eye injuries.

"The obligation to put into effect the methods, devices, and practices which experience has demonstrated to be successful in protecting the eyes of workers belongs to many groups. It is an obligation first of all on the owners and managers of industry and on all their executives and sub-executives. It is a responsibility of employees individually and collectively through their labor union and other organizations concerned with the health and welfare of workers.

"It is an obligation of government administrators—federal, state, municipal, and county alike. It is an obligation of public and private health and welfare agencies which have any contact either with industry or with industrial workers. It is most directly the responsibility of all those professionally concerned with or having an opportunity for the protection of eyes and of general health, including safety engineers, safety inspectors, industrial physicians, ophthalmologists, general physicians, surgeons, nurses, and local sight conservation agencies."

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X-RAY THERAPY*

INDICATIONS IN EVERYDAY PRACTICE

By

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The history of medicine is marked with many milestones by the introduction, from time to time, of radically new and improved methods of diagnosis and treatment; for example, the discovery of the anesthetic properties of ether by Long in 1842, the establishment of the bacterial etiology of diseases by Pasteur and Koch in the period 1860 to 1870, the advances in chemotherapy in the late 1930's, and many other outstanding achievements too numerous to mention in detail. By no means the least in the long list of accomplishments was the discovery of the x-ray by Professor Wilhelm Conrad Roentgen in 1895. This new and strange form of radiation was destined to become a very important part of the medical armamentarium in both the diagnosis and treatment of disease. Today I would like to review with you briefly the methods of application and some of the indications for x-ray therapy.

The value and effectiveness of x-radiation is dependent largely on two of its peculiar properties; namely, the ability to penetrate solid substances and to produce certain biologic changes. Penetration is controlled almost entirely by the voltage across the tube, and, in the early days, when voltage capacities were somewhat limited, the percentage of any given x-ray dosage to reach deep in the tissues was comparatively small. With the development of very high potential machines, this obstacle has been largely over-

come. This has led to an arbitrary classification of x-ray therapy into three types: (1) superficial therapy, utilizing voltages from 80 to 140 kilovolts; (2) deep therapy, in the voltage range from 140 to 250 kilovolts; and (3) so-called supervoltage therapy, from 300 kilovolts to a million volts. It is interesting at this time to recall the fact that million volt therapy has largely been made possible by the researches and diligent work of Dr. Robert Van deGraff of the Massachusetts Institute of Technology, who is a native of Tuscaloosa and a graduate of the University of Alabama. Supervoltage therapy, however, is still more or less in the experimental stage and for practical purposes we shall consider only the first two types. With the wide choice of voltages from 80 to 250 kilovolts it is possible to administer a predetermined dose of x-ray to any point in the body, from the surface to the deepest portion of the abdomen without danger of undue damage to the normal underlying or intervening tissues.

Ideas as to the methods of applying radiation therapy are constantly changing. At one time in the past it was the practice to give a little at first, repeat it in a few weeks, then again in a few weeks, and so on, until either the lesion got well or the tissues all broke down and ulcerated under the strain of constant bombardment. The number of bad results by this method caused it to be abandoned for a more precise and accurate technique, and this was largely brought about by the establishment in 1928 of the international unit of dosage, the roentgen or r unit. At present three general methods of treatment are more or less universally followed: (1) the massive dose technique in which the entire amount deemed necessary is given in one, two or three sittings. This is true caustic radiation. It results in an intense blistering reaction which heals in two to four weeks,

*Read before a meeting of the Northwestern Division of the Association, Berry, October 21, 1941.

leaving a soft, smooth scar. This does not bear repeating. (2) The fractional technique, in which small weekly doses are given for four to six weeks without any resulting skin reaction. (3) The protracted fractional technique of Coutard, in which small daily doses are given for a period of three to six weeks. This method results in a moderate to severe skin reaction with vesiculation which heals completely, leaving smooth, normal-appearing skin. Even so, a repetition of this treatment must be done with caution and in reduced amount. These three general methods have many modifications, and should one try to detail the number of different techniques used in this country today he would be confronted with a tremendous task. However, they all seem to obtain similar results for the reason that they all have the same basic objective, that of delivering an adequate amount of radiation to the diseased tissue. It is generally agreed by radiation therapists that this should be accomplished at the first treatment, or in the first series of treatments, due to the fact that diseased tissue tends to become relatively more resistant to radiation, and the surrounding or intervening normal tissues relatively more sensitive following treatment.

With these methods in mind, let us then consider some of the common conditions which are either curable or definitely benefited by x-ray therapy. Though they are usually classified by the anatomical systems affected, I find it more convenient to discuss them under the following headings: (1) inflammations and infections, (2) endocrine and metabolic disturbances, (3) tumors—benign and malignant and (4) miscellaneous.

INFLAMMATIONS AND INFECTIONS

The majority of these occur on or near the surface of the body. They are considered in two groups:

(a) Acute infections. Boils, carbuncles, erysipelas, cellulitis and lymphangitis all show favorable and sometimes striking reaction to radiation if treated in the first 24 to 48 hours. Complete abortion of the inflammatory process can usually be obtained in this early stage. Only very small doses are necessary, usually 80 to 100 r, which is equivalent to about one-quarter of an erythema dose. If treated in later stages, the results are not so good but benefit can still

be obtained. In the case of boils and carbuncles the suppurative process can be hastened, allowing for earlier incision and drainage thereby lessening the period of disability. Acute and subacute cervical adenitis, secondary to throat infections which occur so commonly in children, responds better to radiation therapy than to any other form of treatment. These glands, if left alone, frequently suppurate, requiring incision with the resulting formation of unsightly scars. This unfortunate sequence of events can be prevented in about 80 per cent of the cases by x-ray therapy. The exact mechanism by which results are obtained in these acute inflammatory processes is not known, but it is believed that the radiation destroys large numbers of the leukocytes gathered in the area thereby releasing the protective substances contained within them. In the early stages this is usually sufficient to neutralize the invading infection and the inflammation subsides.

(b) Chronic infections. Skin diseases make up a large part of this group. Probably the most prevalent of all of these are the fungus infections, which really appear to be assuming the proportions of an economic problem. The expression, four out of five have it, can almost truly be applied to athlete's foot and ringworm of the groin; and the male sex certainly has no monopoly on the latter of these annoying affections. Two of my most grateful patients this summer were women, one 60, the other 25, both of whom had had recurrent ringworm of the groin for several years. There are many different types of fungi which affect the body, and most of them show a favorable response to four or five weekly treatments by x-ray when all other remedies fail. Ringworm of the nails, however, is most difficult to cure by any means, and in this form few or no results are obtained unless the nails are first removed. Even then results are very disappointing. Actinomycosis and blastomycosis are also comparatively resistant to treatment but can be cured by radiation if the treatment is persistent. The recent trend is to treat them heavily, very much in the manner of treating cancer, and this appears to be bringing about a larger percentage of cures.

Numerous other chronic skin infections respond favorably to a few small weekly treatments. Among these might be men-

tioned psoriasis, tuberculosis, exfoliative dermatitis, pityriasis, verruca and acne. It is true that not all of these are real infections. For example, acne is much more probably a disturbance of fat metabolism, the skin manifestations being due to deposits of lipoids together with secondary infection. In this case, control of the fat intake should greatly augment the value of the local treatment. And so with the other members of this group. While radiation therapy to the local lesions is of value, the underlying basic causes must also be considered and corrected if possible.

There are also certain deeper-seated chronic infections which merit attention. Tuberculous adenitis of the cervical glands can be completely controlled by radiation without surgical intervention. These are true granulomas and are among the most sensitive to radiation of all pathologic tissues. Several months are required to obtain final cure. Chronically infected and hyperplastic lymphoid tissues in the pharynx show gradual shrinkage after a few exposures of deep therapy. This is of particular value when the lymphoid tissue has begun to invade the eustachian tubes, producing partial deafness. Radon seed have also been used for this purpose but x-ray therapy appears to me to have a wider margin of safety. Finally here I would like to mention unresolved pneumonia. This complication frequently prolongs the course of a pneumonia many days or weeks. If, after the crisis has occurred, there still persists a little low-grade fever and some residual consolidation in the lung, without any evidence of empyema, one to three 200 r doses of x-ray over the involved area will, in most cases, clear the condition up. It should be remembered, though, that the longer the unresolved area persists untreated, the more fibrosis will take place and the less effective will be the treatment.

ENDOCRINE AND METABOLIC DISTURBANCES

Endocrine: (1) Hyperthyroidism. I place this first, both because of its frequency and the fact that it has long had a place in the list of radiosensitive conditions, opinions to the contrary notwithstanding. There is plenty of evidence in the literature that overactive thyroids can be controlled by x-ray. True, there were many bad results, particularly in the earlier days, by over-

zealous operators lacking full knowledge of the safety precautions necessary. But radiology has gone a long way in the last decade and the good results now obtained far outweigh the dangers. The development of higher voltages and the use of heavier filtration have made it easily possible to deliver a dose into the gland which is well within the safety limits of the skin. Reported cures by different authors range from 66 to 88 per cent, with improvement in 88 to 97 per cent.

(2) Menorrhagia, amenorrhea and oligomenorrhea. These disorders of menstruation in girls and young women often prove very distressing and frequently result in sterility after marriage. They are endocrine disturbances, quite frequently pituitary in origin. There are very often associated headaches of an almost intractable nature. It has been found that a large percentage of these cases can be materially helped and frequently cured by the administration of so-called stimulating doses of x-ray to the pituitary gland weekly for about three weeks. These doses are very small, usually between 50 and 100 r, and are absolutely without danger. The term stimulating is probably incorrect, for it is doubtful that x-ray is in any way stimulating. It apparently does bring about a better balance, however, probably by depressing the function of an overactive area and allowing more normal function of the entire gland.

(3) Menopausal hemorrhage. This is not an infrequent occurrence in women in the menopausal period. It is endocrine in origin and exceedingly trying on the patient. It is one condition in which we are able to obtain 100 per cent good results with x-ray therapy. Provided that curettage proves the absence of any malignancy in the body of the uterus, complete cessation of the menses can be secured in about 6 weeks after the administration of 6 to 8 daily 200 r treatments. In practically all of the cases there will be at least one menstrual period following the series. It seems that in the artificial menopause so produced the usual symptoms of that period are somewhat less severe.

The above mentioned conditions are probably the most common of the endocrine disturbances which are amenable to x-ray therapy. Other less common ones which can also be greatly benefited are (a) hyperparathyroidism, in the form of osteitis fibrosa cystica—in this condition the radiation is

given direct to the parathyroids; (b) hyperpituitarism in the form of acromegaly, (c) hypergonadism, and (d) hyperplastic thymus glands in children.

Metabolic disturbances. Under this heading, acne vulgaris, previously mentioned, should probably be given first consideration. It certainly makes up a large part of the average radiologist's practice. That faulty fat metabolism plays a large role seems to me to be unquestioned. Nor can the endocrine factor be overlooked, for many of these patients appear to have hypothyroidism. Nevertheless, four to six weekly doses of x-rays to the front and sides of the face certainly bring about marked improvement in most of the cases. The other metabolic disturbances in which x-ray is of value are rather uncommon. One of interest, which is occasionally encountered, is Hands-Schuller-Christian's disease, or xanthomatosis. In this condition large deposits of lipid material are found in the bones, particularly those of the skull, producing irregular map-like areas of destruction, visible in the roentgenogram. It is found usually in children, although I have seen one case in a young man of 18 years. The lipid deposits can be made to resolve by the use of x-ray but the course of the disease generally is not affected. It may clear up spontaneously about the time of puberty.

TUMORS

Obviously the immensity of this subject precludes anything but a bare touching of the surface. It is one of the major problems of medicine today and is growing year by year. Radiology rightfully shares a big part of the responsibility of the handling of this problem. However, the best results will be obtained only by the closest cooperation among the general practitioner, the internist, the surgeon, the pathologist and the radiologist. The family doctor occupies a position of extreme importance in the early recognition of neoplastic diseases. It is his responsibility to see that these patients receive treatment as early as possible in the course of their disease. If he is unable to treat them correctly he should see that they reach the proper hands before it is too late.

We consider tumors under two heads, benign and malignant. In general, benign tumors are not very radiosensitive. They are considered because of the possibility of

malignant degeneration. Most of them are best excised or destroyed by electrocautery. Occasionally, where operation is not feasible because of the general condition of the patient, x-ray therapy will serve to reduce them in size and hold them in check. This is particularly true of uterine fibroids which will shrink as much as 50 per cent or more after 1000 to 2000 r. Hemorrhage will be checked and symptoms greatly relieved. Malignant tumors, because of their embryonal characteristics, are much more radiosensitive. They show, however, a wide variation in this respect amongst themselves. Tumors of the lymphatic system, for example, are extremely sensitive to comparatively small amounts of radiation. In this group fall the lymphosarcomas, the lymphoepitheliomas and Hodgkin's disease. Unfortunately, though, they are prone to recur in other parts of the body at a later date even though the original lesion has entirely disappeared. Nevertheless, the lives of patients with these tumors can be considerably prolonged and occasionally the patient can be cured. At the other extreme we have carcinoma of the prostate and carcinoma of the rectum, both of which can stand extremely large amounts of radiation with very little effect.

Cancer of the breast shows quite a favorable reaction to x-ray therapy. Frequently, following a series of preoperative x-ray treatments of the breast, it will be most difficult or even impossible to find the tumor in the operative specimen. We are not yet ready to say, however, that cancer of the breast should be entirely a radiologic problem. I do advocate the use of preoperative x-ray in all except the very earliest of cases. By so doing, the tumor is decreased in size, the more malignant cells are completely killed, the remaining cells are made less malignant, thereby reducing the risk of spread at operation, and a field which is less fertile for regrowth of the cancer cell is created by the action of the x-ray on the blood vessels of the tissues. This, to me, is a more logical approach than to wait and give postoperative radiation. I have seen fewer recurrences in preoperatively treated patients than in those who had no radiation or only postoperative radiation. The preoperative series should be fairly intense and should produce a rather marked skin reaction. It should cover not only the area of apparent involvement but also the axilla and supraclavicular

area as well. At least three or four weeks should elapse before operation in order to give time for the skin reaction to heal and for the radiation to get in its full effect. Then nothing less than a radical operation should be done, preferably with the cautery knife.

Cancer of the cervix uteri is now considered entirely a radiologic problem. In stages I and II, 50 to 75 per cent get 5-year cures by combined x-ray and radium therapy. The x-ray is preferably given first externally, and the series usually requires approximately 4 weeks. Two thousand r to each of four pelvic fields is the average amount given. It is in most cases followed by a certain amount of blistering. This series results in a marked decrease in the size of the tumor mass, the hemorrhage ceases, and the patient improves. About two to four weeks later the final lethal dose of radium is given by applicator inserted into the cervical canal and uterine cavity. In this disease, as in most other malignant conditions, the aim should be to give *enough* the first time to get the cure. Repeated incomplete treatments will fail. Half-way measures *will not cure cancer*.

The two tumors just discussed above make up a large percentage of the radiologist's practice. Another malignancy which is less common but still fairly frequent is carcinoma of the buccal cavity, the pharynx or the larynx. These are usually handled by radiation therapy, except certain tumors of the larynx which are resectable. Generally speaking, carcinoma of the lung or of the gastrointestinal tract is not greatly benefited by radiation. The condition belongs primarily in the field of surgery, and x-ray is of value only as a palliative measure in inoperable cases.

Cancers of the urinary tract show varying degrees of radiosensitivity depending upon their location and type. For example, fungating tumors of the bladder mucosa show excellent response to externally given x-ray followed by local implantation of radium. On the other hand, carcinoma of the prostate, as previously mentioned, is extremely radioresistant. Tumors of the kidney, particularly hypernephroma, respond readily to preoperative x-ray therapy but should be removed following radiation. In this condition several postoperative series should be given at intervals of three to four months.

Cancer of the skin is a very common condition, particularly in the rural population and among other people who are constantly exposed to the elements. It is a very easy matter to apply sufficient radiation to these lesions and for this reason a very high percentage are curable if metastasis has not taken place. The previously enunciated principle, namely, the full cancericidal dose should be applied at the first treatment, very definitely applies here. If recurrence occurs due to insufficient treatment the problem becomes more difficult and the chances of cure are lessened. This is where the real caustic type of radiation is necessary, and it is wise to warn all patients before giving the treatment that they are going to have to undergo a period of considerable discomfort after the reaction sets in. This requires considerable patience, particularly if the lesion is situated on the lip. We can assure these patients, however, that their chances of cure are excellent and that only a very small and barely noticeable scar will result.

This has been the briefest handling of the subject of radiation in the treatment of cancer. Nonetheless, I hope that it conveys some idea of the important part that radiology has to play in this problem.

MISCELLANEOUS

In this group I would like to consider a few conditions which cannot be classified under any of the above headings. The leukemias are disorders of the blood-forming organs, the cause of which is unknown. It is possible, however, to bring these conditions under control and keep them so for comparatively long periods of time. The blood count can be made to return to an almost normal level and the symptoms greatly relieved. It is still not decided whether or not radiation actually prolongs the lives of these patients but it does make them more bearable. The dosage necessary is not large and it can be repeated safely at frequent intervals for many years as needed. It is not wise to reduce the blood count below forty or fifty thousand as there is always a tendency for the count to fall for several days after treatment.

X-ray therapy is often of value also for the relief of certain symptoms in which the pathology is either obscure or not curable. The tendency to hemorrhage, such as is seen in cases of purpura, can frequently be con-

trolled by two or three deep therapy treatments over the spleen. Symptomatic relief of pain in such widely differing conditions as tic doloireux, herpes zoster and hypertrophic arthritis is frequently an indication for moderate doses of deep therapy, either over the involved area or over the nerve roots supplying that area. Symptomatic relief of itching can nearly always be obtained in senile pruritus, particularly of the perineum and in other skin conditions.

THE MANAGEMENT OF ESOPHAGEAL STRICTURES*

By

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Mobile, Alabama

In spite of the fact that a federal law has been passed requiring that proper warning labels be placed on ordinary household lye containers, we are yet confronted continually with infants who have swallowed lye. Until evolution progresses to the point where children learn to read poison labels at the same time they learn to crawl, we shall be called upon to handle these exceedingly troublesome and tedious cases. This is particularly true in the case of the Negro race, where past experience means little to the illiterate and easy-going parent with many little ones crawling around on the kitchen floor. Just recently, the mother of a child who had been under treatment for two years for a lye stricture appeared in the clinic with a second child having the corroded lips and throat so typical of the freshly-burned lye case. Upon being questioned as to the cause, the mother very benignly said, "He ate lye just like his brother did!" We still see far too many of these unfortunate accidents.

From these opening remarks, it would seem that all benign esophageal strictures are due to the ingestion of lye either accidentally or with suicidal intent. Vinson¹ in his recent monograph on diseases of the esophagus states "that in recent years strictures from lye, typhoid fever and vomiting during pregnancy account for less than half

the fatal number of cases, and at present the majority of benign strictures are of uncertain etiology." About 70 per cent of cases seen in Mobile are due to the ingestion of lye. Additional causative factors are other escharotics, hot liquids, and the ulcerations resulting from tuberculosis, syphilis, scarlet fever and diphtheria. Injuries from stab wounds and impacted foreign bodies may be listed also, although they happen infrequently. Congenital strictures are found occasionally and may not be diagnosed until adult life is reached.

PATHOLOGY

Where a true stricture exists in an esophagus there has usually been a deep burn involving the mucosa, the submucosa and the muscular layers of the organ, with the resulting formation of dense scar tissue, the amount of which depends on the depth and duration of the primary ulceration. These strictures may be single or multiple, annular, tubular or eccentric. Real strictures seldom follow superficial burns, although in these cases web formation may take place. The strictures from simple inflammatory processes are generally single and are more prone to occur in the lower part of the esophagus. Those due to the escharotic action of lye occur more frequently in the upper portions of the organ due to the fact that there is normally a slight slowing of the passage of the liquid at the cricoid constriction and at the arch of the aorta. However, the stricture may occur anywhere or everywhere throughout the entire length of the organ. If the stricture has existed for any length of time, there is usually a dilatation of the esophageal walls above the point of obstruction, with pouch formation due to stasis of food and the thinness of the muscular walls.

DIAGNOSIS

The symptoms of esophageal stricture are dysphagia, with distress and regurgitation of food soon after eating; sense of fulness or pain in the substernal region just above the strictured area, loss of weight, dehydration and acidosis. The usual cases seen on the Ear, Nose and Throat Service at our City Hospital generally present most of these alarming symptoms. Diagnosis is made by roentgenoscopic study and, if deemed advisable, by direct esophagoscopy. With the esophagoscope, white scar tissue is seen in

*Read before the Association in annual session, Mobile, April 15, 1941.

1. Vinson, Porter P.: *The Diagnosis and Treatment of Diseases of the Esophagus*, Springfield, Ill.: Charles C. Thomas, 1940.

contrast to the normal pink mucous membrane, and there is relaxation of the muscular walls above the stricture with retention of solid foods and liquids. Where there is a dense cicatrix present the normal movements of the esophagus with respiration do not take place.

TREATMENT

Of primary importance in the treatment of these patients is attention to the general condition of the patient. If dehydration and ensuing acidosis are present, fluids must be pushed to the limit by hypodermoclysis, venoclysis or proctoclysis. In the freshly-burned cases with extensive ulceration and sloughing present, soothing oils, as olive oil, or dry bismuth subnitrate should be given at frequent intervals in an effort toward preventing gluing together of the mucosal walls and to lessen the amount of dysphagia. Early in treatment the patient should swallow a silk string to keep the lumen patent. This string is used in subsequent treatment as a guide for either peroral or retrograde dilatation. Dilatation is usually begun four to six weeks after the accident unless the patient is unable to swallow liquids and there are signs of dehydration before that time.

There are several methods of dilatation. Plummer and Vinson² advocate the use of the olive-tipped bougie threaded over the swallowed string. The long thread which has passed on into the intestinal tract can be pulled sufficiently taut to act as a guide for the bougie and thereby prevent mishaps. Chevalier Jackson³ advocates bouginage under direct esophagoscopy with silk woven steel-shank bougies, a method which is more troublesome and dangerous than the others mentioned. Hoag⁴ uses Levine tubes introduced over the thread and left in the esophagus continuously, the size being gradually increased. In this method, which is most efficacious in the freshly burned cases, the esophagus is put more or less at rest as the patient is fed through the tube; and, also, the esophageal walls are under continuous equalized pressure throughout.

2. Ibid.

3. Jackson, Chevalier, and Coates, George M., editors: *The Nose, Throat, and Ear and Their Diseases*, Philadelphia: W. B. Saunders Company, 1929.

4. Hoag, C. L.: *Benign Strictures of the Esophagus; A New Method of Gradual Dilatation*, Ann. Otol., Rhin. & Laryng. 46: 327-337 (January) 1937.

Tucker's⁵ method of gastrostomy and retrograde dilatation carries a mortality rate of 5 to 10 per cent, but, in the long run, is the safest method where multiple and eccentric strictures are so often encountered in lye cases. This is the method followed on the Ear, Nose and Throat Service at the City Hospital in Mobile, where the majority of the patients are seen late and after much cicatrization has occurred, and where the patients are, for the most part, infants or young children. After gastrostomy is done, the patient can swallow a string without difficulty and it can be picked up in the stomach by means of a hook or pillar retractor. In cases where the string does not come through the strictured area easily, the method of Iglaue is used. A cystoscope is introduced into the stomach through the gastrostomy, the cardia located, and a ureteral filiform bougie or catheter threaded gently through the cardia and strictured portion of the esophagus, to come into the pharynx where it can be picked up and the string drawn back through the esophagus. This method has proved very useful in patients where there is almost complete atresia. In children the string is worn endlessly, being brought out through the nose, through the gastrostomy and knotted. In adults this is not necessary as the patient can swallow a string at the time of each treatment. A gastrostomy tube is worn continuously to prevent spontaneous closure of the fistula.

As a rule, patients with considerable cicatrix already present are dilated first with a size 20 French-Tucker bougie which can be passed easily. It is important that no force be used in pulling the bougie through the stricture and that the sizes are increased very gradually over a long period of time. It is better to use the same size bougie many times than to force larger ones through too soon. If it is always kept in mind that the thin walls of the organ tolerate but little tension, then fatal accidents will not occur. At first, dilatations are done at biweekly or weekly intervals until the larger sizes, about a 34 French in children, are passed readily. This may take many months or years to accomplish.

5. Tucker, G.: *Cicatricial Stenosis of the Esophagus with Particular Reference to Treatment of Continuous String, Retrograde Bouginage with the Author's Bougie*, Ann. Otol., Rhin. & Laryng. 33: 1180-1214 (December) 1924.

The gastrostomy opening should be maintained for a period of several months after the esophagus is considered to be adequately dilated in order that an occasional bouginage may be done. If, at the end of a year, the larger size bougies still pass readily, then the fistula may be closed. This will generally occur spontaneously. However, the patient should return for periodic examination over a period of years as there may be a very gradual narrowing of the strictured area.

Impermeable stricture of the esophagus is not often seen. Attempts have been made to create openings through the scar tissue in these cases but the results are seldom good. I have had no experience with any case of complete stenosis. If the patient is given a string to swallow during the early stages of the burns this distressing complication should never happen.

PROGNOSIS

The prognosis in cicatricial stricture varies with the age of the patient, with the amount of damage done to the esophagus by the escharotic, and with the period that has elapsed between the time of the burn and that at which treatment is first instituted. These strictures never clear up spontaneously and, if untreated, go on to marked obstruction or complete closure. In a short superficial stricture the chances of permanent cure by dilatation are much better than where there is long and deep scarring. The chance of cure is better in children than in adults as the growing esophagus, being more elastic, is much more amenable to dilatation than in older patients. Where there is extensive scar formation, years of treatment may be necessary. The perseverance of the patient in treatment is an important factor since he must return many times over a period of years and as long as there is a tendency for the scar to contract. Much patience and care are required on the part of the surgeon to effect a cure in the usual case.

Sterility—One must properly evaluate malpositions of the uterus. All of us see women with wombs in abnormal positions who conceive without difficulty. A retroflexed uterus may prevent conception by distorting the tubal lumen, by pointing the external os out of reach of the seminal pool, and, by improper circulation of the ovaries and pelvic organs, may prevent normal ovulation and proper endometrial changes necessary for fertility. Replacement of the uterus and a properly fitted pessary usually suffice.—*Glober, Texas State J. Med., Nov. '41.*

TRAUMATIC RUPTURE OF THE BLADDER AND URETHRA*

SURGICAL MANAGEMENT

By

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The great advance in recent years of high-speed transportation and industrialization has very markedly increased the problem of management of traumatic rupture of the bladder and urethra. Since the *early* and proper treatment of these lesions contributes so much to the ultimate consequences, it is the purpose of this paper to discuss some of the problems and results seen in our cases in the past four years.

In this period ten patients (all males) have been treated at the Norwood Hospital for traumatic rupture of the bladder and urethra, the result of a severe crushing injury in the region of the pelvis or perineum caused by either mine or automobile accidents. Only one of the cases occurred while the patient was under the influence of alcoholic intoxication, mentioned by so many writers as a causative factor. No cases are included in this series which resulted from infections associated with urethral stricture, periurethral abscess or other condition.

Any patient who has received an injury of even a moderate degree in the region of the pelvis should receive prompt and competent medical attention. Hospitalization is a prime prerequisite for proper diagnosis and treatment. The patient upon admission to the hospital should be accorded the usual routine examination to determine the degree of shock and extent of superficial injuries, determining as far as possible how the injury was sustained and the force of it. It should be noted at the time of examination whether there is any sign of blood at the external urethral meatus. *Any sign of blood demands further investigation.* The patient should be catheterized immediately to determine the patency of the urethra. If the catheter meets an obstruction before entering the bladder which seems to increase the bleeding from the meatus, it is safe to assume that the urethra has been completely or at least partially severed, and demands

*Read before a meeting of the Northwestern Division of the Association, Berry, October 21, 1941.

immediate surgical treatment. If the catheter passes readily into the bladder and grossly bloody urine is obtained, it can safely be deducted that some degree of trauma of the bladder has occurred. I have never seen a case in which there was any significant degree of bladder trauma if the catheterized urine was grossly clear. A few authors have declared that a grossly clear specimen of urine can occur in the presence of a complete rupture of the bladder.

If the case is seen early there is very little likelihood that there will be any physical signs of urinary extravasation apparent in the abdominal wall above the symphysis pubis. Rupture of the urethra anterior to the pelvic fascia, when seen early, often presents a marked hemorrhagic swelling of the scrotum, perineum and spermatic cords. Radiologic examination of the pelvis may give some clue to the extent and location of the perforation but it should not influence one's decision as to whether operative intervention is necessary.

Many procedures have been suggested to determine whether the bladder has been ruptured, such as the injection of air through the catheter, followed by fluoroscopy or radiography to detect the extravasation of air in the tissues. The danger of air emboli following this procedure is not great but cannot be dismissed too lightly. Another procedure has been tried by others, which consists of irrigating the bladder with some sterile fluid in an attempt to determine whether all of the fluid can be recovered. If all of the fluid does not return it may be deducted that some of it has escaped into the surrounding tissues by way of the perforation in the bladder.

It has been our policy to institute immediate open drainage for any case in which the catheterized specimen of urine is grossly bloody, or when attempted catheterization meets obstruction in the posterior half of the urethra and aggravates the bleeding. We feel that the information obtained from the various diagnostic procedures that have been suggested is not reliable enough to determine whether open drainage should be carried out. Our mortality has been 10 per cent, which is definitely less than most authors quote, and we believe that this is due to the fact that we institute open drainage even in borderline cases without waiting to

see whether any evidence of sepsis or extravasation will develop.

The extent of the operative procedure is determined by the patient's condition on admission. If the patient is admitted in shock, immediate measures are taken to combat it, while the patient is being prepared for operation. Sodium pentothal intravenous anesthesia has been used in all operative work with very satisfactory results. Suprapubic cystotomy is the primary procedure to be carried out in all cases.

If the bladder is ruptured, suprapubic cystotomy alone is sufficient. During the operation the interior of the bladder should be thoroughly inspected to determine whether there is any tear into the peritoneal cavity. If a perforation into the peritoneal cavity is found, the peritoneum should be opened and the perforation closed. Perforations which are extraperitoneal should be sutured if large, but nothing need be done if they are small. Many of these cases present marked active bleeding in the space of Retzius from the perivesical veins, and these should be ligated as soon as possible. Provided the point of rupture occurs in the anterior wall of the bladder, this opening may be used for the introduction of the suprapubic catheter and the usual purse-string suture is taken around the opening.

The degree of trauma to the urethra determines the type of treatment instituted. Several patients have been treated who have presented rather profuse bleeding from the meatus, probably as the result of a contusion of the soft parts and usually without evidence of fractures. A catheter in these instances passes readily into the bladder where it encounters clear urine. In such cases our method of treatment consists of strapping the catheter in the urethra, and applying counterpressure over the catheter by means of a gauze roller bandage and the application of ice-packs to the penis and scrotum. The catheter is left in place for three or four days. If the catheter is removed too soon, hemorrhage may reoccur, especially if the patient has an erection.

When the urethra is ruptured to such an extent that a catheter cannot be passed, suprapubic cystotomy is done in the usual manner, and at the same time an attempt is made to pass a catheter through the entire urethra by means of retrograde manipulation. This catheter is allowed to remain in

the urethra for at least two or three weeks to act as a splint for the urethra to heal over. This procedure is sufficient if urinary extravasation has not already occurred in the perineum. If the patient is in shock it is best to omit trying to correct the urethral deformity at this time, although if at all possible splinting of the urethra should be carried out as soon as practicable since it enhances the ultimate result. In those cases in which splinting of the urethra cannot be carried out at the time of the original operation, a secondary operation will be necessary to dissect out the scar tissue in the region of the rupture and to approximate the ends of the urethra. In none of our patients have we sutured the severed ends of the urethra.

Following perineal section many of these patients will develop single or multiple sinuses which demand painstaking care if they are to be cured. The urethral catheter which is used as a splint is removed at intervals of seven to nine days in order to cleanse both it and the urethra. While the catheter is out, sounds are passed, up to size 28 F., in order to insure the calibre of the urethra and to note its contour. Many of these urethrae will be found to pursue a tortuous course, and the attending physician must learn the peculiarities of it so that at a later date he will be able to pass sounds as a part of the postoperative treatment without causing further damage. Occasionally such dense scar tissue forms as a result of multiple sinus formation that a block dissection of the entire superficial structure of the perineum must be carried out. The purpose of this operation is to remove dense scar tissue which will not contract and heal solidly, and also to convert multiple sinuses into a single one. Usually these sinus tracts produce a great deal of granulation tissue in the process of healing. This is usually taken care of by curetting the sinus and then cauterizing with a silver nitrate stick. The suprapubic cystotomy which was done at the time of the original operation is not allowed to close until the operator is satisfied that the urethra will heal in the proper alignment and no further need will be found for retrograde manipulations.

Most of our patients shortly after the original operation experienced marked abdominal distension which persisted for an unusually long time and proved very annoying during their convalescence. No satisfactory

method was found for relieving this distension, but it was observed that as the general condition of the patient improved the distension disappeared spontaneously. Oxygen therapy for patients in severe shock and with marked abdominal distension has been a very valuable aid in the first few postoperative days.

A rare complication occurred in one of our patients, namely, osteomyelitis of the pelvic bones. This is a very serious condition and usually terminates fatally, but fortunately in our case the patient made a full recovery after multiple blood transfusions and other supportive treatment.

Following the patient's discharge from the hospital, the physician's responsibility does not end for an indefinite period of time. Postoperative care consists of the passage of sounds up to a 28 F. at intervals of every two weeks to one month to insure that the calibre of the urethra is maintained at a satisfactory level. Infection in the urinary tract should be cleared up as far as possible. If, at the end of two years of postoperative follow-up, the calibre of the urethra has been maintained at a 28 F., one may be reasonably sure that a good result has been obtained. These patients should be kept under observation for the balance of their lives, especially if they have suffered a severe rupture of the urethra.

VITAMIN THERAPY IN RELATION TO DERMATOLOGY*

By

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Animals, including man, cannot remain in good health on a diet consisting of adequate amounts of the so-called primary food substances alone; namely, carbohydrates, proteins, fats, salts and water. Additional food factors, commonly designated as vitamins or accessory food substances, are now recognized as being equally essential to normal growth and continued health.

Credit for first recognizing the place of vitamins in nutrition is generally accorded to F. Gowland Hopkins of Cambridge University, England. In 1906, Hopkins postu-

*Read before the Association in annual session, Mobile, April 16, 1941.

lated the importance in diet of factors too small in amount to be classed as foods.

The earlier contributions to our knowledge of vitamins in this country came from the laboratories of Osborne and Mendel in New Haven, and from that of E. V. McCollum in Baltimore. In fact, the use of the letters A, B, C, D, E, etc., in describing them, is due to McCollum.

Many think of vitamins as mysterious energizers that add stimulus or pep to the consumer. Experience has shown the fallacy of this view, and our belief today is that they function in diet because they are essential parts of complete diet. They do not act as a substitute for calories, nutrients or digestibility, but, if the diet includes all of these factors necessary, it will fail to provide normal health unless supplemented by certain vitamins. To add them in proper amount permits us to use our other nutrient factors efficiently. To omit them from the diet results in specific pathologic conditions which enable us to tell what vitamin is lacking. To add more than we need has apparently no harmful effects but certainly does not give us any added health or energy.

VITAMIN A

Vitamin A is one of the first vitamins whose existence was recognized and, as is now well known, is found in large quantities in milk, egg, cod-liver oil, halibut oil and the oil from certain other fish livers. A closely related compound, carotene or provitamin A, is abundant in green, leafy vegetables, especially so in carrots. There seems to be a sharp division between material manufactured by plants and that produced in the animal kingdom. All vitamin A appears to be derived from plant life originally. However, the plant can build it up only to the stage of provitamin A or carotene, which is chemically similar to, but not identical with, vitamin A. The final step in the synthesis occurs after the ingestion of carotene by the animal. The cow feeds on green leaves, thus securing an adequate supply of provitamin A. The living cells in the cow, particularly in the liver, transform this into true vitamin A. This is excreted in large quantities in the milk and may be taken by man direct as vitamin A in milk, cream and butter. This vitamin in fish liver oil also appears to have come originally from the plant kingdom, the

basic source of food for smaller fishes being green algae or seaweeds.

Curiously, deficiency in vitamin A appears to affect only one type of tissue in the body, epithelium. This is the covering membrane, the skin and the mucous membranes. It also affects certain elements in the retina, but it is of interest that in the development of the embryo these elements were originally derived from the same embryonic layer as the epithelium of the skin. Although there are other causes, vitamin A deficiency appears to be the most common cause of night blindness.

Following investigation, various doctors have found that keratosis follicularis, lichen pilaris, lichen spinulosus and ichthyosis follicularis are all cutaneous manifestations of vitamin A deficiency, and they secured marked benefit by the administration of vitamin A in daily doses ranging from 100,000 to 300,000 units. In my experience the use of vitamin A in the treatment of keratosis follicularis and its allied conditions more nearly approaches a specific remedy than any of the other vitamins or conditions, and I have found that uniformly good results have been obtained with smaller doses, 75,000 to 100,000 units.

Hypovitaminosis A is manifested by loss of hair, brittle nails, weakness and emaciation. Vitamin A has been found to be the direct antagonist of thyroxin. In subjects with a normally functioning thyroid and normal vitamin A metabolism, medium and small doses of vitamin A caused increased growth of hair, but only small doses of the vitamin cause increase in growth of nails.

Dr. I. Dainow treated twelve patients with occupational dermatitis by intramuscular injections of vitamins A and D. Classic treatment had been unsuccessful. The vitamin treatment resulted not only in disappearance of the cutaneous lesions, but also in desensitization in eleven patients, 14-40 injections having been given. Considering the results of the treatment, he assumed that skin tolerance to certain substances depends on its content of vitamins A and D.

To determine the behavior of vitamin A and carotene index of the human blood in different skin diseases, examinations were made on the blood of 290 dermatologic patients by Drs. Schneider and Widder, and yielded values which, as compared to the figures for subjects with healthy skin,

showed a reduction for carotene of 29 per cent and for vitamin A of 35.5 per cent. Patients with superficial skin diseases, such as eczema, showed no greater reduction than those with the other dermatoses. Six patients with lupus, and patients with old syphilis, showed a normal carotene content and a very low vitamin A index.

It has been found that babies receiving additional vitamin A had less diaper dermatitis and intertrigo than did control babies on regular diet. Also, that infants with weeping eczema showed improvement on vitamin A.

Nine children, with cutaneous lesions of vitamin A deficiency were observed by Drs. Edward Lehman and Howard Rapaport. The dermal lesions were symmetrical and located chiefly on the extremities. Some children showed immediate improvement in the results of visual tests, with single adequately large doses of vitamin A, but others required prolonged intensive therapy. Maximum improvement of skin has been attained with a daily dose of 100,000 to 300,000 international units of vitamin A in two to four months.

VITAMIN B COMPLEX

At one time water-soluble vitamin B was thought to be a single vitamin, responsible for a form of polyneuritis known as beriberi. Today, nine separate factors have been recognized. The significance of the majority of these is not yet clearly understood. A few have been isolated, completely separated from other contaminating substances, and even prepared synthetically in the laboratory. When this has been accomplished, investigators are in a position to determine exactly what the vitamin is in terms of chemistry, by determining the chemical structural formula. It is customary, when this stage is reached, to designate the substance no longer by a letter such as A, B or C, but to give it an appropriate scientific name. Vitamin B-1, or the antiberiberi vitamin, now becomes thiamin chloride, while vitamin B-2 or G is now designated riboflavin.

Thiamin Chloride has a very complicated chemical formula from which, with very great abbreviation, the name thiamin is derived. Deficiency of this nutritional element may cause other symptoms than beriberi. For some as yet incompletely understood reason, persons deficient in thiamin develop

anorexia or loss of appetite. Children do not grow as rapidly. The neuritis which occurs in chronic alcoholics appears to be due to deficiency of thiamin resultant on an inadequate food intake. The function of this substance in the body is fairly well understood. It appears to act as an enzyme or catalyst, necessary for the utilization or metabolism of carbohydrate, the chief energy-producing food. Unlike vitamin A, which is stored in the body for long periods, there is no large reservoir for this food element. It is found in largest quantities in the liver, kidneys and heart, but even here there is not enough to last long if the intake in the food is insufficient. Vitamin A is fat soluble, not dissolved in water, while thiamin is water soluble. Any excess in the blood is therefore rapidly lost through the kidneys.

Some degree of thiamin deficiency is not unusual, due chiefly to modern methods of preparing food. It is abundant in the germ portion and outer or bran layer of seeds. Unfortunately, the bran layer is customarily removed in the separation of refined flours. Nearly all vegetables contain fair amounts, but this is often lost or destroyed in the process of cooking. Thiamin, being soluble in water, is leached out in the boiling of vegetables.

The legumes, such as peas and beans, nuts and whole grains, are good sources. Fruits, meat, milk and eggs are also good. Liver, sweetbreads and kidneys are the best of the meats. There are no single foods which contain such large quantities that they may be depended upon as the sole source of thiamin. As a consequence, the daily supply must be derived from a combination of foods. For thiamin content, whole wheat bread is preferable to white bread. Several food concentrates are available for those who must increase their thiamin intake. There is a concentrate of rice polishings, and wheat germ may be purchased in packages. Yeast in the form of cakes, tablets or, better, powdered brewer's yeast has a reasonably high thiamin content. More important, purified or synthetic thiamin is available.

In a study of the value of vitamin B-1 in six obstinate cases of herpes zoster accompanied by radiculitis and neuritis, it was found that the vitamin plays a considerable role, but only when associated with sedatives or alteratives usually given for relief of neuritic pain. Since remedies such as

antirheumatic agents, sedatives, local applications containing cocaine or procaine, applications of heat or cold and autohemotherapy had not brought desired results, vitamin B-1 was first tried exclusively but unsuccessfully. When, however, it was given in combination with the old remedies, all of the patients improved steadily.

However, Drs. Rattner and Roll treated 16 cases of herpes zoster with crystalline thiamin chloride, and injections were given every second or third day in doses of 2,000 international units subcutaneously. The results were disappointing, and it was concluded by them that treatment with vitamin B-1 is no more beneficial than with the usual less expensive methods.

Drs. Durand, Spickard and Burgess treated two cases of acrodynia with vitamin B-1. In the first case, 6 injections of 2,000 units of crystovibex resulted in marked improvement of the skin, as well as of the general condition. As soon as parenteral treatment was supplanted by oral administration of 600 units daily, exacerbation of symptoms occurred. Six more injections of vitamin B-1 were administered, and finally led to recovery. In the second case, 6 injections of Betalin-S were followed by considerable improvement, and oral treatment by exacerbation. Resumption of injections resulted in complete cure.

Dr. J. Forsythe reports that out of four children with pink disease, acrodynia, three were successfully treated with vitamin B-1. The fourth case was a classic example of pink disease. Response to vibex tablets was not convincing, but improvement occurred after administration of wheat germ in the form of bemax. Besides vitamin B-1, bemax is stated to contain the various other factors of the vitamin B-1 complex.

Riboflavin or Vitamin B-2 or G: It was at first thought that riboflavin was the vitamin which prevents pellagra. This has since been shown to be erroneous. A yellowish pigment with green fluorescence has been known to be present in milk for a number of years, but very little attention was paid to it, since it was thought to be of no great importance. It was first called lactoflavin, later riboflavin. In 1932 it was found in yeast, and since then investigators have demonstrated its presence in a large number of animal and plant products. In plants it is especially abundant in green leaves, less so in stalks

and roots. As a matter of fact, it probably exists in every living cell, since it has been shown to be an enzyme or catalyst which chemically transports the oxygen from outside the cell into it where it gives the oxygen up to the cell itself. Without riboflavin, living cells appear to be unable to utilize oxygen. It is present in the retina. In rats, shortage stunts the growth, lowers the general body tone and produces a condition of premature aging of the skin with loss of hair and eczema. We do not know of any specific human disease due to shortage of riboflavin, although it seems probable that changes similar to those observed in rats would apply in man. The abundance of this vitamin in the commoner foods, in order of decreasing quantity is as follows: dry powdered yeast, liver, cottonseed flour or meal, wheat germ, egg yolk, kale, spinach, whole egg, beef, egg white, whole wheat, cheese, milk, carrot, banana, turnip, orange, potato, tomato and apple. The average human requirement is 500 units.

In treating typical eczema by saturating the patient's system with vitamin B complex, the treatment has generally been so striking, as found by Drs. Kristensen and Vendel, that they suggest that eczema may be a sign of a deficiency of vitamin B complex. However, it has been agreed by Drs. Sulzberger and Wise that this is highly improbable. In my hands, no improvement was noted in this condition by administration of the vitamin.

Nicotinic Acid: This has been mentioned as a specific for the treatment and cure of pellagra, and is considered to be the pellagra-preventive, or P-P vitamin. Nicotinic acid is widely distributed, and in yeast, liver, milk, lean meat and legumes in particular. These are the foods used in the treatment of pellagra. At the same time it should be noted that pellagra may be due to deficiency of more than one vitamin. In some cases nicotinic acid does not cure all manifestations. When this happens, thiamin or riboflavin, or both used in conjunction, may complete the cure. Although not proved, the evidence at present indicates that nicotinic acid is either the actual vitamin or a provitamin which is converted into the vitamin itself within the body. This vitamin is seemingly essential to the integrity of the cells of the body, necessary for normal functioning of the gastro-intestinal tract, the

skin, the nervous system and probably other systems.

Tests made on 46 students at the University of Minnesota revealed that nicotinic acid cannot be regarded as a cure for acne, but it is a simple and apparently harmless drug which appears to help. Improvement was shown in 55 per cent of the students, which is not very encouraging, however, considering that the disease is cyclic and self-limited, so that in any series of patients with acne, whether treated or not, a considerable number will show improvement.

Drs. Kuhnau and Keining report satisfactory results from the use of nicotinic acid amide in the treatment of lupus erythematosus. Kuhnau, especially, feels that it is superior to the usual methods employed.

VITAMIN C

We are accustomed nowadays to think of scurvy as a semi-extinct disease which affected sailors and other persons who, for one reason or another, were deprived of fresh fruits and vegetables over considerable periods of time. Actually, low-grade scurvy is a common disease today. It is due to deficiency or absence of vitamin C, designated ascorbic acid in Europe, and cevitamic acid in the United States. The trend is toward acceptance of the former term.

This vitamin is quite different from those in the B complex group. It may be synthesized or manufactured in the tissues of all plants and the majority of animals. Consequently there are only a few animals which are likely to manifest evidence of deficiency. These are man, the anthropoid apes, and the guinea pig. As with most of the other vitamins, the function of ascorbic acid appears to be connected in some measure with that of growth. In plants it is much more abundant in young growing tissues than in the mature or relatively inactive ones. Its fundamental function in man and other animals appears to be that of control of the colloidal or gelatinous substance which is formed in the connective tissues, outside and surrounding the living cells. Knowledge is as yet uncertain as to whether the vitamin acts on the intercellular substance directly, or indirectly through the living cells which manufacture the substance.

The individual cells of the capillaries, the smallest of the blood vessels, are cemented together by a special type of this intercellu-

lar substance. In vitamin C deficiency this is no longer produced. As a consequence the cells are not adequately held together, and blood leaks out of the capillaries into the surrounding tissues. Hemorrhage is therefore an important symptom in scurvy. As observed on the skin, it is termed purpura. It may occur on the mucous membranes or in the tissues of the body where it is not seen. With this idea in mind, I gave the vitamin to patients suffering with senile purpura, but we were unable to see any influence it had on the course of the disease that varied from the usual.

The same general type of cell which produces connective tissue also manufactures bone and teeth, by laying down or secreting these extremely hard substances outside of and between the cells themselves. In the same way that the gelatinous substance of the connective tissues is not formed properly in scurvy, bone and dentine become imperfect, with resulting softening of these tissues.

A good deal of work has been done with vitamin C in an effort to desensitize the patient to certain drugs, and also to try to combat photosensitivity, as manifested in lupus, pellagra, etc. The result of this work is still in the experimental stage, and nothing of uniform value has been determined. In association with this idea, the work on lupus erythematosus has been carried out with encouraging results.

Citrus fruits, tomatoes, fresh strawberries, green peppers and raw cabbage are among the richest sources of vitamin C. Green, leafy vegetables contain a fair amount, except for lettuce in which it is lower. However, since lettuce is eaten raw, it forms a fairly good source. Onions, turnips, parsnips and cauliflower are also good sources.

VITAMIN D

Absence of vitamin D produces a deformity of the growing bones in infants and young children known as rickets. It was originally believed that a single vitamin was represented, but more recently nine similar vitamins have been isolated. However, only two of these appear so far to be of great importance in the prevention of rickets. They occur in nature as provitamins and are changed to the vitamin itself under the influence of sunlight. Both ergosterol and cholesterol are sterols or solid fats, the for-

mer derived from the plant kingdom and the latter from animals. Ergosterol is the principal sterol of yeast and was first obtained from mushrooms as early as 1811. It is especially abundant in yeast and fungi. Its origin in these plants is not understood. Under the influence of sunlight it becomes activated to the vitamin and is then termed viosterol. The pure crystalline vitamin is termed calciferol.

Vitamin D owes its presence in eggs to the action of sunlight on the chicken's feathers. The only two abundant animal sources of vitamin D are eggs and fish oils. Milk is another potential animal source, although normally it contains only the provitamin, none of the vitamin itself. However, exposure of milk to ultraviolet light activates the vitamin.

Vitamin D prevents or cures rickets. In the absence of either of the types described, some change occurs in the body fluids so that bone salts, calcium and phosphorus can no longer be incorporated into the growing bones. Furthermore, there is some bone deposition at abnormal sites around the outside of the ossification centers, where new bone is produced, instead of in them, with consequent deformity and thickening of bones in these areas. The result is enlargement of knees and ankles, bowed legs, beading on the front ends of the ribs and bony overgrowths on the forehead. Rickets may follow other causes than absence of vitamin D. If there is insufficient calcium or phosphorus in the diet, new bone will not be adequately produced. However, the vitamin appears to control the utilization of these minerals.

The normal requirement of vitamin D may be defined as that amount which, in the presence of ample calcium and phosphorus, insures sufficient retention of these minerals to promote normal growth of the skeleton and teeth of infant children, maintain these structures through adult life, and provide for the additional requirements of mother and infant during pregnancy and lactation. It should be noted that man may manufacture his own vitamin D if he has sufficient exposure to sunlight. It is for this reason that rickets is more likely to occur in infants and young children during the winter months when the sun's rays are feeble.

Thirty-seven patients with psoriasis, treated by Dr. George E. Clarke, were given

natural fish oil in massive doses, yielding 300,000 to 400,000 USP units of vitamin D daily for three to four months, only 30 per cent showing improvement. Viosterol in oil in similar doses—300,000 to 400,000 units of vitamin D—was given to 107 patients with psoriasis daily for three to four months, and of these only 12 per cent showed slight improvement. The conclusion was that, although both natural and synthetic vitamin D preparations are safe to give in massive doses over long periods, this type of therapy is unreliable to control or to cause involution of psoriatic lesions. Vitamin D is by no means specific for psoriasis, and may give rise to occasional reactions.

As far as my own experience in the treatment of psoriasis with vitamin D is concerned, I feel that it is worth trying, inasmuch as there is evidence of a greater proportion of regression in those cases taking vitamin D. However, I have been unable to see any permanent alleviation.

Dr. Maynard considers the use of vitamin D in the treatment of acne to be of the greatest dermatologic and practical importance, after treating 130 patients with vitamin D. He believes that the greatest benefit derived from the use of vitamin D is in the avoidance of roentgen therapy. He states that scleroderma and roentgen sclerosis improved noticeably with vitamin D.

So far as the effectiveness of vitamin D in the treatment of acne is concerned, it has been in my practice a complete disappointment, as I have been unable to see any effect that its use has made on the course of the disease.

Maynard also reported cure in two cases of localized scleroderma, three of alopecia areata, and two or three of granuloma annulare, and 100 per cent improvement in a case of old roentgen atrophy. In my own experience, with three cases of scleroderma that were given massive doses of vitamin D, 200,000 to 400,000 units daily, there has been a disappearance of all involvement in one patient, marked improvement in the second, and mild improvement in the third. Naturally, this small number of cases is hardly enough to draw any general conclusions from, however.

Drs. Ludy and Devalin reported good results with vitamin D in six cases of pemphigus. Drs. Tauber and Clarke noted partial or total disappearance of the cutaneous le-

sions in eight of nine patients with pemphigus, who were given massive doses of vitamin D. In the management of pemphigus, reported results indicate that massive doses of vitamin D offer as much relief as any other known method of treatment.

I have found that massive doses of vitamin D in chronic pemphigus have proven a most effective means of treatment, as we have been able to clear the patient completely, and, following the disappearance of the lesions, have been able to maintain a healthy condition with much smaller doses. Recurrence of the lesions came about with the cessation of the vitamin in every instance.

VITAMIN E

Vitamin E is usually spoken of as the reproductive or antisterility vitamin. Most of the work has been done on animals, especially rats and mice, and the application of the findings to human disease is as yet chiefly presumptive. Vitamin E is derived chiefly from wheat germ oil, but occurs elsewhere, as in lettuce oil, cottonseed oil, palm oil and tomatoes. It is important in cellular reproduction, proliferation and growth but as yet we have found no use for it in dermatology.

OTHER VITAMINS

While the vitamins described above complete the list as it applies to vitamin deficiency in man, there is evidence that in experimental animals still other essential food ingredients are required. Thus, vitamin B-6 is one whose deficiency causes dermatitis in rats. Very little is known of it, and there is as yet no evidence of its importance in diseases of man. Factor H or vitamin H is known to exist by virtue of the fact that trout cannot live unless fed small amounts of fresh meat. Vitamin I, also termed vitamin B-7, prevents digestive disturbances in pigeons. This is found in rice polishings. Factor J is found in fruit, especially St. John's berries, and cures pneumonia in guinea pigs. Absence of vitamin K in the diet of chickens results in abnormally slow blood clotting. It is present in sprouted soy beans, probably also elsewhere. Vitamin P occurs in lemon juice and red peppers. It prevents purpura, when ascorbic acid fails to do so. Factor W is a substance present in the liver which is necessary for the growth of the rat. The list is probably not complete as yet, and it may well be that time will

show that some of these last vitamins are of some importance in human physiology.

In conclusion I would like to say that, in my opinion, the indiscriminate use of vitamins, and particularly the tendency of some physicians and manufacturers to lead the general public to believe that vitamin therapy is a panacea for all human ills, should be very definitely frowned upon. It is an expensive method of treatment, and for that reason is, at times, a burden on the patient financially; and since we all admittedly do not know all, or even half, the story of the effect of vitamins, we cannot possibly know what future effects may be brought about by this indiscriminate usage.

DISCUSSION

Dr. Toulmin Gaines (Mobile): After hearing such a complete and detailed synopsis of the use of vitamins in dermatology, it is only left to me to synthesize the situation by calling attention to the invariable association of the vitamins from A through D with lesions of the skin. The author called attention to vitamin A deficiency and its association with keratotic conditions; and with their alleviation by supplying this deficiency. While vitamin B-1 or thiamin is principally used in beriberi, it is also given along with riboflavin, nicotinic acid and B-6 or pyridoxin in pellagra. Riboflavin and pyridoxin deficiencies each give rise to inflammation of the lips (cheilitis). Nicotinic acid deficiency gives rise to such decided changes in the skin that the skin usurped the name of a condition in which other organs were far more important factors.

Deficiency of vitamin C will be responsible for more cases of sore mouth simulating Vincent's angina than cases of the now relatively rare scurvy. And while vitamin D finds its greatest use in the treatment of rickets it has proved to be of value in that comparatively rare but almost invariably fatal disease, pemphigus. The author reports a case cured by him and mentions others as having cured six and nine cases respectively. The three cases that I have treated before the use of viosterol unfortunately terminated fatally. While I agree with the statement that so far vitamin E has not proven of any use in dermatology, I shall make bold to prophesy that since it has some obscure association with hormonal activity it may one day be found of service in the treatment of acne. I also believe that vitamin A will have its uses in acne by reason of its modification of epithelial overgrowth, which is one of the factors in this condition.

I would like to make a few references to statements made in the excellent work on pellagra written by Dr. Seale Harris. It seems probable that many infections and infestations of the human body, particularly of the gastrointestinal tract, by producing liver insufficiency, may be predisposing causes of importance in producing nicotinic acid deficiency, the essential factor in

the genesis of the disease. Drs. King and Hamilton of Nashville reported at the last session of the dermatology section of the Southern Medical Association that they had cured eight cases of lupus erythematosus with liver extract. As this is an obscure and intractable condition we may have here another indication for the use of vitamin therapy. This paper is reported in this month's Southern Medical Journal (April 1941) with my remark, in the discussion, that this report fitted in with Dr. Harris's demonstration of liver deficiency as a cause of pellagra. Loss of liver function might here again result in some kind of avitaminosis.

In reference to the diet in pellagra, Dr. Harris quotes Dr. T. D. Spies as saying that a high carbohydrate intake makes demands on the thiamin content which soon becomes insufficient. That it also draws on the nicotinic acid supply and results in its deficiency is considered a reasonable assumption.

Gastrointestinal disturbance with resulting vitamin deficiency is now considered to be in part responsible for seborrheic conditions. Dermatitis herpetiformis has long been associated with liver disturbance. Here again it is possible that vitamin deficiency is involved.

PNEUMOTHORAX IN THE HOME*

By

KELLIE N. JOSEPH, M. D.

Birmingham, Alabama

Long familiarity with tuberculosis has produced in us, both doctors and laymen, an apathetic and appalling indifference to the subject. As soon as tuberculosis is mentioned a gentle numbness of complete understanding comes over us and we applaud politely without really having heard the paper. Tuberculosis is the fifth columnist of all diseases. We are lulled into false security by the beautiful, declining curves of the death rates and forget that it is still the leading cause of death between the ages of 20 and 40. Then, while we have been keeping our eyes on tuberculosis under forty, it has entrenched itself firmly in the age group past forty until it is now a very serious problem in elderly people.

Tuberculosis has always been, and always will be, a disease in which home treatment is of primary and fundamental importance. I believe it is safe to say that at least ninety per cent of the cases of pulmonary tuberculosis in Alabama are treated at home. No matter how many sanatorium beds we have

or ever will have, this will always be so, human nature and tuberculosis being what they are.

The best place to treat tuberculosis is in a sanatorium. It has been my privilege to treat tuberculosis in a state sanatorium, in a county sanatorium and now, privately, chiefly in the home. Without a doubt, the hardest place to treat the tuberculous is in the home. However, because of lack of hospital beds, we are forced to treat most of our patients in the home with, wherever possible, a short stay in a sanatorium for collapse therapy, education, etc. The only important, accepted advance in the modern treatment of pulmonary tuberculosis is that of collapse therapy. Therapeutic pneumothorax is unquestionably the best method of providing collapse and rest for a diseased lung. It is the only collapse method I know of that can be done as well in the home as in a sanatorium. To the necessary bed rest at home we can easily add therapeutic pneumothorax whenever indicated. Patients at home getting pneumothorax cooperate with the physician far better than those on bed rest alone. Aside from the benefits of the pneumothorax itself, the frequent necessary visits of the doctor encourage the patient to persevere in his long task of getting well. Then, too, the doctor must give more attention and care to his pneumothorax patients and gets to understand these cases far better than his others.

In Birmingham and Jefferson County we are fortunate in having available to our patients an excellent sanatorium of now 150 beds in which all forms of thoracic surgery are done. On finding a case of pulmonary tuberculosis, I make every effort to have the patient admitted to the sanatorium. White patients can usually obtain admission in about two to six weeks. However, our beds for negro patients are very few and blocked by a large waiting line. In fact, up until September 1940, we only had sixteen beds for this portion of the population. We now have about fifty beds for negroes. In the South our bottleneck in the fight against tuberculosis is lack of sufficient sanatorium beds to assure early and adequate treatment for our negro patients. As you know, tuberculosis in the colored race, in most cases, cries out for collapse therapy as soon as possible. A minimal case, excellent for pneumothorax, seems to bloom into a far

*Read before the Association in annual session, Mobile, April 15, 1941.

advanced and hopeless condition while one is filling out the application blank for admission to the hospital. In Birmingham the Medical Director of the Jefferson County Sanatorium has helped us a great deal in cases to be collapsed by taking them in whenever possible for a week or ten days, getting their pneumothorax started and sending them back home to continue refills and treatment as necessary. Even with this help, I have found it necessary in an appreciable number of cases to start and continue pneumothorax at home.

I shall not go into the exact technique of pneumothorax since it can be found in any textbook. I instruct the patient to have the bedroom warm and comfortable, and generally give pneumothorax in the morning. Then, if anything goes wrong, such as pleural shock or air embolism, I have all day to attend to it. The first dose is usually 300 to 400 cubic centimeters of air. After giving the air and withdrawing the needle, the patient remains quietly as he is for about five or ten minutes. Then, I have him sit up while I listen to his chest. By this time, any immediate danger, such as air embolism or pleural shock, is largely past. The first three or four doses of air are given with 48 hours between each dose during the first week. The second week two doses three or four days apart are given, and thereafter once a week or as often as necessary. After the first three or four doses, if the patient is well enough, I have him come to the office for a fluoroscopic checkup. As soon as possible the patient comes to the office for his treatments, at which time he is fluoroscoped before and after each refill. If he is too sick to come to the office, refills are continued at home and efforts are made to get him to the office simply for a fluoroscopic checkup after every six to eight treatments.

I am rather opposed to doing the first three or four treatments in the office. I feel that acute, dangerous and perhaps fatal complications are more liable to happen in the initial stages when the lung is close to the needle than at any other time, and if it is going to happen, I would much rather have it occur at home in bed than at the office. You know what I mean.

In the past two years I have started and maintained pneumothorax in the home on twenty-two patients—ten men and twelve women. Rather unusual is the fact that in

only one was I unable to establish pneumothorax because of massive adhesions. This patient later had an extrapleural pneumothorax at the sanatorium and returned home to continue her refills. Nothing untoward has happened to any of these patients.

SUMMARY

Therapeutic pneumothorax is a valuable procedure which can easily be added to the home treatment of pulmonary tuberculosis wherever indicated. Too many cases needing pneumothorax progress from a good to a poor risk while bedresting at home waiting for a sanatorium bed. An early short stay in the sanatorium to get the pneumothorax under way or establishing the collapse at home is a practical common sense use of modern tuberculosis therapy.

DISCUSSION

Dr. Merle Smith (Parrish:) It is an honor to be asked to discuss this paper as I know of no one that is a more enthusiastic physician and teacher in the field of tuberculosis than the speaker, formerly as a state clinician and now as a private practitioner. He has done a great deal to make the doctors in northern Alabama conscious that tuberculosis can be treated.

It has been said that, all factors being equal, the sanatorium pneumothorax patient has a ten per cent better outlook over the patient that has his started in the home or office. But Dr. Joseph has pointed out that weeks may elapse before the victim can be treated in the sanatorium. A number of years ago the essayist related an incident which greatly impressed me and has been a guide in my treatment. This was the story of a Negro, in whom was found a minimal lesion and, which, in spite of bed rest, quickly blossomed into a far advanced case and finally caused his death before he could be hospitalized. This might have happened even though pneumothorax had been instituted, but it is not up to us to deny our patient all possible aid. At times haste is imperative.

It is true that the procedure is more dangerous in the home or office, but, if care is exercised, we can do these patients a great deal more good than harm by early treatment. During the past several years I have started seven patients in the office and home without a mishap. Of course, the careful physician will want a checkup within the first month and, if the patient is still too ill, a portable x-ray machine can be carried into the home.

In no disease must the victim be more patient and his hope kept buoyed than in the one with tuberculosis. And we can help a great deal in giving them a better outlook by early active aid among friends.

<p>NEXT ANNUAL MEETING MONTGOMERY APRIL 21, 22, 23, 1942</p>
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MODERN TREATMENT OF SINAL DISEASE

By

E. R. NODINE, M. D.
Andalusia, Alabama

The acute sinus should be labelled "hands off." One will be safer if one sticks to this rule. I get fairly good results by putting these patients at rest in a warm room, and using a weak ephedrine solution in saline daily, followed by gentle suction. Do not use strong oily medications in this or any other stage of sinusitis. They will kill the ciliated lining cells eventually. In this connection I want to refer you to the article by Proetz in the October 1939 number of Archives of Otolaryngology.

For relief of pain, aspirin and hot or cold applications are sufficient. I have never used morphine. Steam inhalations are useful at times.

When one is confronted with a fulminating case of sinusitis, with history of repeated attacks, surgery is often imperative. Here one must be radical to obtain adequate drainage, since failure follows conservative measures. Inasmuch as we are confronted with disastrous complications, such as brain abscess, orbital infections, osteomyelitis and meningitis, it is not wise to remove only the front wall of the frontal sinus. The floor and the posterior wall, as well as the ethmoids, should be exenterated. This method should be pursued where there is any sign of meningeal irritation or if there is an increased spinal cell count. If one is dealing with osteomyelitis, all diseased bone and a wide margin of healthy bone should be removed. It is here that most of us are not radical enough.

It is in chronic types of sinusitis that we fail most often in treatment. The possibility of an associated allergy should be kept in mind. When this condition exists there must be cooperation with the internist if the patient is to be relieved. Certainly one should not operate recklessly. At times it is advisable to do a submucous resection or a middle turbinectomy; and in children to remove the tonsils and adenoids for drainage purposes.

My experience has been gratifying in chronic suppurative cases through the use of

the Proetz displacement method of treatment. This is done by first shrinking the nasal chambers and then having the patient lie down with the head in extreme extension and alternately instilling one per cent ephedrine into the nostrils, followed by gentle suction. This is done about three times a week for six weeks. Along with this I give mixed vitamin therapy.

In antral infections I wash out the cavity and instill 20 per cent lipiodol for several sittings. If there is an opening into the mouth following extraction of a tooth, that does not heal in ten days, it must be dealt with surgically. Usually, long standing antral infections, with polyposis, have to be dealt with by a Caldwell-Luc operation.

Depending upon the individual, there are times when radical surgery is advisable in chronic cases. This is one where polyposis and metaplasia of the mucous membranes have made conservative treatment impossible. The ethmoids are the usual offenders. Personally, I do not like an intranasal operation on these sinuses since I feel that it is dangerous and never complete. The external route leaves practically no scar and at the same time give access to the frontals and sphenoids. Some modification of the Killian or Lynch operation is best. As I said before, in many of these chronic cases the posterior wall of the frontals is involved. The external route gives us a chance to see. It has been my experience that most failures in frontal surgery have arisen from failure to remove the floor and orbital prolongations. The aftercare and follow-up are most important.

We have been overly enthusiastic, perhaps, with chemotherapeutic trends. I refer to the use of sulfanilamide and its allied products. There is danger in their indiscriminate use. They may mask serious symptoms and let pathology gain headway. I have had private patients who did not yield to ordinary treatment but who cleared up under sulfanilamide. However, it was not given without a demonstration of the presence of hemolytic streptococcus organisms and of inability of the patient to cope successfully with the infection.

In highly virulent and fulminating sinal disease, small repeated blood transfusions are indicated. I have used them with excellent results.

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IN MEMORIAM

Whereas, Death has removed from our midst our distinguished State Health Officer, wise counsellor, and friend, James Norment Baker; and

Whereas, His brilliant career as practicing physician, Secretary and President of The Medical Association of the State of Alabama and State Health Officer reflected great credit upon the medical profession of the state and nation; and

Whereas, The high esteem in which he was held by his medical confreres throughout the nation, as attested by his selection for numerous posts of honor, including the presidency of the Conference of State and Provincial Health Authorities of North America, the chairmanship of the National Malaria Committee, membership in the House of Delegates of the American Medical Association, the presidency of the Federation of State Medical Boards of the United States, and the presidency of the Southern Branch of the American Public Health Association, enabled him to exert a powerful influence upon medical practice and the trend of public health throughout the United States and the world; and

Whereas, His devotion to the cause of public health and his indefatigable and brilliant

*Deceased.

labors in that field have given the Alabama State Department of Health high rank among the leading public health agencies of the time; and

Whereas, As organizer of the Medical Reserve Corps for the State of Alabama, as chief of surgical service in the base hospital at Camp McClellan, and as commanding officer of Evacuation Hospital No. 45 at Fort Oglethorpe during the first World War, he made a notable contribution to his country in a time of great national emergency; and

Whereas, As chairman of the State Committee on Medical Preparedness and in his capacity as State Health Officer, he aided greatly in preparing the country to meet similar national emergencies of the present and the uncertain future; and

Whereas, He cemented even more strongly the ties between the medical profession and public health, to the great advantage of both; therefore be it

Resolved, That, in his passing, The Medical Association of the State of Alabama has lost one of its ablest members; and be it further

Resolved, That the State Department of Health has lost a most distinguished and devoted leader; and be it further

Resolved, That his death is a great loss to all the people of Alabama, for whom he labored so conscientiously and well; and be it further

Resolved, That a copy of these resolutions be sent to Dr. Baker's family, that they be printed in The Journal of The Medical Association of the State of Alabama, and that they be made a permanent part of the records of this Association.

(Signed) Lloyd Noland
E. V. Caldwell
M. S. Davie

For the State Board
of Censors

The strength and virility of any nation, whether in peace time or at war, rest ultimately upon the fibre—the physical and moral fibre—of its manpower. Upon differences in the structure of these human building blocks likewise rests a nation's final fate. Even in placid peace time, it is the responsibility of the health worker to protect and safeguard a nation's human resources and to see to it that these are carried to the highest practicable level. In time of crisis, these responsibilities are augmented many fold.—J. N. Baker, J. M. A. Alabama, June '40.

ALABAMA'S NEW STATE HEALTH OFFICER

The man who has just assumed the heavy burden of directing Alabama's public health activities brings to his new responsibilities an exceptional background of training, experience and personal contacts which is expected to prove of great benefit both to him and to the important state department which he now heads. Dr. Burton Forsyth Austin, chosen by the State Committee of Public



Health as Acting State Health Officer and successor to the late Dr. J. N. Baker, is well acquainted with Alabama's problems and Alabama life, not only in the field of public health but in other fields as well.

Dr. Austin, who has lived for the past several years at 11 Lexington Road, in Montgomery, was born January 12, 1895, in Marl, Geneva County, Alabama, and received his elementary and high school education in the schools of that county. After graduation from the Geneva County High School, at Hartford, he entered the Medical School of the University of Alabama, then situated in Mobile, in 1913. During his four years as a medical student, which ended with his re-

ceiving the M. D. degree in 1917, he became a member of the George A. Ketchum Medical and Surgical Society and the Theta Kappa Psi medical fraternity. He later—in 1932-33—spent an academic year at the Harvard School of Public Health, from which he received the degree of Master of Public Health.

On December 15, 1917, a few months after his graduation from the University of Alabama School of Medicine, he volunteered for service with the United States Army and enlisted as a first lieutenant in the Medical Reserve Corps. His duties included physical examinations of recently enlisted men, food inspection, supervision of garbage disposal, and maintenance of a program of general sanitation. After serving seven months at Camp Greenleaf, Ft. Oglethorpe, Ga., and Camp Mead, Maryland, he went overseas where he served as Battalion Surgeon in the Coast Artillery Corps and in the Base Surgeon's office at Brest, France until July 1919. He received his discharge February 2, 1920, at Ft. McPherson, Ga.

His return to civilian life was followed within a short time by his entry into public health work in his native state—work in which he has been engaged continuously ever since, except for the nine months spent in postgraduate study at Harvard. Becoming Morgan County health officer May 1, 1920, with headquarters in Decatur, he remained in that position until January 31, 1923, when he became Madison County health officer, with headquarters in Huntsville. After spending exactly the same time—33 months—there that he had spent in Morgan County, he accepted an offer from the late Dr. S. W. Welch to become district health officer in charge of public health activities in thirty North Alabama counties. A number of county health departments were organized and began functioning under his direction.

In July 1935, Dr. Baker named Dr. Austin director of the State Health Department's Bureau of Hygiene and Nursing, which Dr. Baker was eager to expand after the serious curtailment of its activities and those of the State Health Department generally due to the depression and the consequent sharp reduction in funds available for public health work. As director of that important bureau, Dr. Austin was in charge of the Division of Maternal Hygiene, the Division of

Oral Hygiene, the Division of Public Health Nursing, the Division of Mental Hygiene, the Division of Child Hygiene, and the State Health Department's nutrition service. It was from that post that he was called to assume the direction of the entire State Department of Health.

Dr. Austin has long been prominent in the activities of the American Legion, having

been elected State Commander in 1937 and having served for seven years as chairman of its Americanism Committee. He is a prominent member and officer of Trinity Presbyterian Church and also is teacher of a large Sunday School class there. Mrs. Austin is also active in church work and was recently elected President of the American Legion Auxiliary, Department of Alabama. They have no children.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

JAMES NORMENT BAKER

A TRIBUTE

By

B. F. AUSTIN, M. D.,

Acting State Health Officer

Those of us who were happily associated with our late friend and chief, Dr. J. N. Baker, heard with shocked, unbelieving ears that he was to be with us in person no more. Slowly but inexorably came the realization, that bright but tragic Sunday morning, November 9, 1941, that he had at last laid his burden down and was at rest.

Although Dr. Baker was not a native Alabamian, no citizen of this state with a hundred years of Alabama ancestry ever felt greater devotion to her than he. Laboring indefatigably in her interest for more than forty years, he contributed enormously to the greatness that is hers today. Few indeed of her native sons and daughters have placed Alabamians as heavily in their debt. Even fewer have extended her fame so widely throughout the country and the world.

This most loyal Alabamian was a native of Virginia, of which he was also a loyal son. He was born in Abingdon on April 11, 1876, almost exactly a century after the Declaration of Independence. When the future Alabama State Health Officer was about six years of age his father became librarian and secretary of the faculty of the University of Virginia at Charlottesville. He held that position until his death in 1902.

Dr. Baker was thus privileged to spend most of his childhood in the academic atmosphere of that famous old Southern university. He received his early education in pri-

vate schools and then entered the University of Virginia, from which he received the B. A. degree in 1895. Having decided upon the healing art as his life work—a fortunate decision for the people of Alabama—he entered that institution's School of Medicine



and received his M. D. degree in 1898. During the last two years of his medical course he acted as demonstrator in the department of histology and biology and also as clinical assistant in surgery, a field in which he was later to attain great distinction. After his graduation from the School of Medicine he served a one-year internship in St. Vincent's Hospital in Norfolk.

In 1899 Dr. Baker became assistant house

surgeon of the Plant System Hospital in Waycross, Ga., and in 1900 became surgeon-in-charge of the Plant System Hospital in Alabama's capital city. That was the beginning of a long and distinguished career as one of the South's greatest surgeons, a career brought to an end, to the great regret of his many patients, by his election to the position he was filling with such great distinction when death overtook him. He was one of the most beloved men of his profession ever to practice in Montgomery, being rarely gifted with a personality which worked wonders in developing and maintaining among his patients a state of mind conducive to recovery. Many of the capital city's most prominent families regarded him as a faithful friend as well as physician and medical counsellor.

He joined The Medical Association of the State of Alabama shortly after becoming a resident of the state and soon became prominent in its counsels. As early as 1905, only five years after coming to Montgomery, he was chosen as secretary of that body and served it faithfully and well for ten years. He yielded that office only to accept another one of even greater honor, the Association's presidency.

Dr. Baker withdrew temporarily from private practice in 1917 to serve his country in the World War. He was commissioned a major and assumed the task of organizing the Medical Reserve Corps for the State of Alabama. He also served as medical adviser to the Governor. Later he was made chief of surgical service in the base hospital at Camp McClellan and still later was transferred to Fort Oglethorpe, Ga., where he acted as commanding officer of Evacuation Hospital No. 45 for overseas duty. He was in command of that unit when that four-year agony of blood and tears came to an end 23 years ago.

Shortly after the signing of the Armistice Dr. Baker reentered the private practice of medicine in Montgomery and quickly reestablished himself as a leader in the professional life of the city in which, except for brief absences from time to time, he was to spend the rest of his life. Already twice-honored by his fellow-physicians, he received other distinctions through his selection by the Atlantic Coast Line and Central of Georgia railways, the Bell Telephone Company and other prominent concerns as

their surgeon. In 1930 he was made State Health Officer.

Many honors came to Dr. Baker, not only within but also outside the state. In addition to those mentioned, he was a counsellor of The Medical Association of the State of Alabama, secretary of the State Board of Censors and of the Alabama State Board of Medical Examiners, a fellow of the American College of Surgeons and the American Public Health Association, a member of the Executive Board of the American Public Health Association, the Governing Council of the American Public Health Association, the Subcommittee on the Educational Qualifications of Public Health Nutritionists of the American Public Health Association, the Committee of Health Activities of The Commonwealth Fund, the Committee on Negro Program of the National Tuberculosis Association, the State Board of Medical Examiners, the State Board for Registration of Nurses, The American Medical Association's House of Delegates, the Southern Medical Association, the National Board of Medical Examiners, a fellow of the American Medical Association, president of the Federation of State Medical Boards of the United States, a member of that group's Committee to Study the Constitution and By-laws, vice-president of the Southern Surgical Association, vice-president of the Association of Surgeons of the Atlantic Coast Line Railway, president of the Southern Branch of the American Public Health Association, chairman of the National Malaria Committee, chairman of the State Committee on Medical Preparedness, and president of the Conference of State and Provincial Health Authorities of North America.

In 1930, when Dr. Baker became State Health Officer, only 46 of the state's 67 counties had their own health departments. Alabama's showing in that respect compared not unfavorably with those of many other states, especially in the South, but it was not good enough for him. He was convinced, first, that the people of Alabama, all of them, needed the benefits of this type of public health service and, second, that provision of 100-per-cent service of this kind on a county basis was an attainable aim. So he set to work on the dual task of "selling" the people on this great need and finding the means of making full-time local public health service available to all. Taking office a few months

after the Wall Street crash of 1929 and beginning his work as State Health Officer under the shadow of an increasingly grave financial depression, he found that he had undertaken a really formidable task. But he kept his bright goal constantly in sight and devoted to it his rare ability to get difficult things done. Success must have seemed far away indeed at times, but as the struggle went on he began edging nearer and nearer to the goal. The 67th and last full-time county health department began functioning on January 1, 1938. Only Dr. Baker's close friends and associates will ever know the satisfaction that came to him with that successful end of a long, hard struggle. Thanks to that struggle, Alabama became, and still remains, the only state south of Maryland providing public health service on a county-level basis to every person within its borders and one of only three in the entire Union doing so.

The fame of Alabama's public health service has been carried to all quarters of the earth. Doctors and public health workers from all over the world have come here to study its methods and have left with warm praise of what they saw. Unless war's wide desolation prevents, the Alabama system of county health administration will be duplicated in at least one foreign country, Finland, whose representative revealed on the eve of his departure that he was going to remember what he had seen in Alabama whenever he should begin his task of organizing local county health units in his own country.

Those of us who knew Dr. Baker so well, and realize with such great sadness that he is with us no more, recognize our loss and Alabama's loss even more keenly than those who knew him only as an outstanding and brilliant public health official. We knew his little mannerisms, his pet expressions, the way he leaned over his desk while he worked, the voice which sounded so well over the radio, in addresses and in private conversation, the way he would walk into the building, his erect, military figure which made him a marked man in any gathering, his courtly manners, his absolute and unflinching honesty, and his interest in and sympathy for the personal troubles of the members of his staff. A few of us—only a few, because he made no show of his giving—knew how generously he contributed

to worthy causes, often without solicitation. We knew how deeply he was affected by the greatest single tragedy of his life, the death of his son in an automobile accident several years ago, a tragedy that left its imprint upon him until the day of his death. We knew of his devotion to his family, the great pleasure he derived from having his friends about him in moments of relaxation, his sympathy for the members of the colored race and his desire to do something to make life somewhat easier for them. We knew of his determination to preserve in the State Health Department of 1930 and 1941 the ideals of Jerome Cochran and the others who dreamed great dreams for Alabama in an age when a state department of health was still a thing of the future. We knew of his keen admiration for the great medical men of his own and earlier times—men like Gorgas, Welch, Cochran, Sanders, Vaughan, the Mayo brothers, Parran and a host of others. We knew him also—even the humblest of us—as a friend. And we now know how greatly privileged we are to have known him.

"Home is the sailor, home from the sea,
And the hunter home from the hill."

Committee Contributions

Maternal and Infant Welfare

MATERNAL MORTALITY

In this section of the country the high maternal mortality rate (Alabama's maternal mortality rate was exceeded by that of only two other states in 1940) is often attributed to lack of facilities for care and to ignorance on the part of the patient. With this in mind, the report of the Committee on Maternal Welfare on maternal mortality in South Carolina is of interest. This committee divided responsibility for maternal deaths into four groupings: patient responsibility, physician responsibility, deaths due to the nature of the disease, and deaths due to lack of facilities. In the group of physician responsibility were placed only those deaths where more than one fundamental rule of reasonably good obstetrics had been violated. On this basis physician responsibility was found to be the chief factor in 41 per cent of the cases and patient responsi-

bility, 20.5 per cent. Deaths due to the nature of the disease accounted for 22.1 per cent and deaths due to inadequate facilities, 16.4 per cent.

Although it is difficult to compare these figures with those of the study conducted in Jefferson County in the period 1931-35 chiefly because no consideration was given to lack of facilities by this group, it is interesting to note that 18.1 per cent of these deaths were considered non-preventable which compares closely with the 21.1 per cent of the South Carolina study. Of the 78.7 per cent preventable deaths, 39.9 per cent were attributed to the physician, 49.5 per cent to the patient, 2.8 per cent to the midwife, and 7.8 per cent divided or undetermined.

It is interesting to compare this report with reports from such units as the Frontier Nursing Service of Hyden, Kentucky. Over a period of years this unit, which works in a remote mountainous section where facilities are poor and patients are impoverished, has succeeded in maintaining a maternal mortality rate of about twenty-one per 10,000 births. This rate is less than one-third that of Alabama's in the same period and even states with the lowest maternal mortality figures exceed this rate. It is also of interest that the mortality rate of patients who receive prenatal care in the maternal and child health clinics in Alabama is considerably lower than the rate of the state as a whole, thus demonstrating the effectiveness and value of this even when the services at the time of delivery are essentially unchanged.

It is thus justifiable to conclude that improved obstetric care by the physician can do as much to reduce maternal mortality as any other measure. Inasmuch as the attitude on need for prenatal care is often determined by the attitude of the physicians in the community, it would also seem proper to conclude that the maternal mortality level is more suggestive of the type of obstetrics practiced in the community than it is of the economic level of the patient or of the availability of adequate facilities.

"Slowly we are beginning to realize the relationship between good housing and health. Other agencies have taken the leadership in slum clearance and in the provision of good housing. It is not too late even now for health departments to concern themselves much more actively with this subject."

Prevention of Cancer

CANCER OF THE BREAST

Cancer of the breast is one form of cancer in which the symptoms can be recognized in their incipient stage by the patient and she can thus see her physician early for diagnosis and treatment. If cancer of the breast could be properly treated when it is first palpable a 70 per cent to 80 per cent survival rate could be expected. The death rate from cancer of the breast could be much lower than it is. There are approximately 13,000 to 14,000 deaths from carcinoma of the breast each year. Cancer of the breast constitutes about 20 per cent of cancer in women and less than one per cent in men.

A painless lump in the breast is the most common early symptom of breast cancer. Bleeding or discharge from the nipple may occur. Occasionally a patient comes to a doctor for symptoms referable to distant metastases, such as back pain, sciatica, pathologic fracture, or enlarged lymph nodes.

An inspection of the undraped thorax should be made first with the arms at the sides and then with the arms raised, noting the relative size, contour and level of the breasts, any tumors, fixation, or dimpling, any altered texture of the skin, or any edema or erythema.

Palpation of both breasts should be done with the fingers extended flat, feeling the tumor or breast tissue between the fingers and the chest wall, never by pinching the breast tissue. This should be done gently in both the sitting and recumbent position. The adjacent lymphatic areas, both axillae, both supraclavicular fossae and the neck should be gently palpated and any enlargement noted.

A roentgen survey should be made before starting treatment. This should include films of the chest, pelvis and thoracic spine. Even if no distant metastases are discovered, one needs these films as a basis for subsequent comparison. Roentgen studies made by injecting the breast ducts are rarely justified as they are traumatic and add to the delay and expense of treatment without giving a conclusive diagnosis. Final diagnosis always depends on a tissue examination. Treatment should depend on whether

the tumor is localized or if metastasis has occurred and the extent of the metastases. Each case should be given individual consideration.

In general, in a patient over twenty years of age with a non-adherent localized lump it should be removed promptly in an adequately equipped operating room where a microscopic examination of frozen tissue can be done and radical mastectomy performed immediately upon the establishment of a diagnosis of malignancy. It is believed that in the case of breast cancer the lapse of even a few days between biopsy and radical mastectomy may allow sufficient time for a previously localized tumor to spread beyond the maximum anatomic limits of a radical mastectomy.

A radical mastectomy should include (1) the entire breast with overlying skin; (2) a wider zone of deep fascia from the clavicle to the xiphoid, and the sternum to the latissimus dorsi; (3) major and minor pectoralis muscles; and (4) gland-bearing fat and areola tissue of the axilla. This should be removed as a single block of tissue.

In cases of breast tumor that are non-ad-

herent with palpable and technically operable axillary nodes, preoperative roentgen therapy followed by radical mastectomy is often the treatment of choice. Postoperative irradiation may also be given.

If the primary tumor is fixed, or if there are metastases beyond the axilla, only palliation is indicated. Roentgen therapy can be used to reduce the size of the lesion and may give satisfactory arrest. Simple mastectomy may be necessary to remove ulcerative lesions that do not heal after adequate irradiation. In some cases distant metastases may require treatment before the local lesion and are usually best treated by irradiation.

Another adjunct to treatment that may be used is roentgen sterilization. A physiologic relationship is known to exist between the ovary and breast. The carcinogenic properties of estrogenic substance are well recognized. Arrest and even regression of both primary and metastatic lesions occasionally follow sterilization. Some men use roentgen sterilization in women before the menopause routinely as an aid in the treatment of cancer of the breast.

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

B. F. Austin, M. D.

Acting State Health Officer in Charge

A RESOLUTION

Whereas, Death has removed from our midst our distinguished State Health Officer, honored official superior, and friend, Dr. James Norment Baker; and

Whereas, The national and international reputation which he won by his notable achievements in the field of public health brought great honor to the Alabama State Department of Health; and

Whereas, His sterling personal qualities, fairness in official relationships with members of his staff and earnest devotion to the development of an outstanding State Department of Health contributed to the development of an unusual sense of loyalty and esprit de corps among those associated with him; therefore be it

Resolved, That in his passing the Alabama State Department of Health has lost a most capable leader; and be it further

Resolved, That his death is a grievous loss to the people of Alabama, for whose well-being he labored so conscientiously and well; and be it further

Resolved, That the personnel of the State Department of Health has lost an inspiring leader and friend; and be it further

Resolved, That a copy of these resolutions be sent to Dr. Baker's family, that they be printed in The Journal of the Medical Association of the State of Alabama, and that they be made a permanent part of the records of the State Department of Health.

(Signed) B. F. Austin
Douglas L. Cannon
A. H. Graham
Committee

Adopted November 17, 1941.

BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

SPECIMENS EXAMINED

SEPTEMBER 1941

Examinations for diphtheria bacilli and Vincent's	1,405
Agglutination tests (typhoid, Brill's, undulant fever, etc.)	1,273
Typhoid cultures (blood, feces and urine)	1,933
Examinations for malaria	2,975
Examinations for intestinal parasites	3,765
Serologic tests for syphilis (blood and spinal fluid)	35,363
Darkfield examinations	47
Examinations for gonococci	2,419
Examinations for tubercle bacilli	1,600
Examinations for Negri bodies (microscopic)	41
Water examinations (bacteriologic)	1,061
Milk examinations	2,014
Pneumococcus typing	2
Miscellaneous	841
Total	54,739

OCTOBER 1941

Examinations for diphtheria bacilli and Vincent's	2,263
Agglutination tests (typhoid, Brill's, undulant fever, etc.)	1,152
Typhoid cultures (blood, feces and urine)	1,595
Examinations for malaria	2,208
Examinations for intestinal parasites	3,938
Serologic tests for syphilis (blood and spinal fluid)	34,242
Darkfield examinations	59
Examinations for gonococci	2,219
Examinations for tubercle bacilli	1,690
Examinations for Negri bodies (microscopic)	49
Water examinations (bacteriologic)	1,049
Milk examinations	2,217
Pneumococcus typing	7
Miscellaneous	1,045
Total	53,733

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

DIPHTHERIA ON THE INCREASE

In the October issue of the Journal attention was called to the need for immunization and reimmunization against diphtheria if this disease is to be kept at a minimum. The year 1940 showed the lowest incidence of diphtheria in the state for the twenty-odd years that records are available. Unfortunately, 1941 is not going to maintain that record since, up to November 15th, there

have already been as many cases reported as during the complete year of 1940. All of the increase has come during the fall months which might indicate a higher incidence during the winter.

At the recent meeting of the American Public Health Association further papers on diphtheria immunization reemphasized the value of alum-precipitated toxoid as an antigenic agency and confirmed the procedure being followed in Alabama as the method of choice. The necessity of following the original series of injections with a stimulating injection was brought out once more if older children are to be protected.

We have been recommending two doses of alum-precipitated toxoid at intervals of a month (longer won't interfere with the response), and then at the time of entrance to school for the first time a single inoculation of 1/2 cc. of the same toxoid. This procedure bears the endorsement of the Diphtheria Committee of the American Public Health Association and will protect against the disease.

We have gone a long way in diphtheria control but still have a fight ahead. Therefore, let us not grow complacent and relax our efforts to eliminate this childhood enemy.

VENEREAL DISEASE CLINICS

Recently the following suggestions were made to all venereal disease clinics operating under the supervision of the state and county health departments:

1. All existing cases of late syphilis, except women forty-five or under, draftees twenty-eight or under, and cases of congenital syphilis are to be discharged from the clinic after forty weeks of treatment.
2. No case of late syphilis is to be admitted to the clinic unless it is a woman forty-five or under, or a draftee twenty-eight or under, or a case of congenital syphilis (children only).
3. No person over forty-five is to be admitted to the clinic unless syphilis is definitely early.

Since late syphilis (syphilis of four years or more in duration) is usually not communicable, little reduction in new cases will occur if the majority of the cases under

treatment are those of late syphilis. If the problem of finance does not enter the picture, then it is a very good procedure to treat all stages of syphilis. However, when the question of finance does enter the picture, as is the case today, then it is necessary to expend money in treatment on that type of infection which will offer the best method of controlling that infection.

The reduction in the number of late cases under treatment will be a gradual one since those individuals that are already in the clinic will be given forty weeks of treatment before their discharge. However, no restrictions will be placed on drugs, and those cases of late syphilis in private practice should continue to be treated.

BUREAU OF MATERNAL AND CHILD HEALTH

J. S. Hough, M. D., Acting Director

MOTHERS' AND BABIES' HANDICAPS IN ALABAMA

Among the conditions tending to act as a brake upon Alabama's progress are an infant mortality rate that in 1940 was approximately 29 per cent higher than that for the United States as a whole and higher than that of all but five of the 48 states; a still-birth rate that in 1939 was approximately 27 per cent above that for the entire United States and higher than that of 40 of the 48 states; and a maternal mortality rate 63 per cent higher in 1938 than that for the United States as a whole—exceeded only by that of a single state, South Carolina.

One of the sad stories told by the records of our Bureau of Vital Statistics and substantiated by a recent WPA study is that 34.3 per cent of all Alabama women who had babies in 1939 were attended only by midwives and others who are not physicians. Turning from the picture as a whole to a consideration of the care received by white and colored mothers viewed separately, we find that 10.3 per cent of the white mothers and 72.9 per cent—nearly three out of every four—of all negro mothers went through that dangerous adventure in life-giving without receiving medical care.

And is there any doubt that Alabama mothers pay heavily with their lives for this lack of medical care?

Definite information has been obtained regarding the prenatal care received by 628 Alabama mothers who succumbed to causes associated with childbirth during the three-year period from 1936 to 1938, inclusive. Of this total, 436, or slightly less than 70 per cent, had not made a single visit to a physician or maternity clinic during the entire period of pregnancy; 77.5 per cent had made not more than one such visit; and 82.2 per cent had made less than three such visits. Less than 6.5 per cent of those 628 Alabama mothers who literally gave their lives for their children averaged as many as one visit a month during the nine-month period.

Alabama is not only a state of abnormally high birth rates, maternal mortality rates, infant mortality rates and stillbirth rates. It is also—and there is of course a strong cause-and-effect relationship here—a state in which motherhood comes at an unusually early age. It may have been big news to residents of other states—as it evidently was to the newspapers all over the country that published the story—that a twelve-year-old girl had a baby a few months ago, but that is not particularly unusual in Alabama. No less than five babies were born to twelve-year-old mothers in this state in 1939 alone. Moreover, the records show that an eleven-year-old Alabama girl had had a baby the same year. More than three per cent of all the women and girls who became mothers in Alabama in 1939 were less than seventeen years of age, more than seven per cent were less than 18, and more than one-fourth of them were less than 21. Of the 61,323 persons who became fathers in Alabama that year, five were less than 16 years of age, 24 were less than 17; 1,287 were 19 or younger, 4,904 were less than 22, and 17,418, or 28 per cent of the total, were 25 years of age or younger. One couple who became parents that year consisted of a 17-year-old boy and a 13-year-old girl. An 18-year-old boy, a 19-year-old boy, a 20-year-old boy, and a 21-year-old youth also became parents that year of babies whose mothers were only 13 years old. Twenty-five babies were born that year whose fathers were still too young to vote and whose mothers could not legally vote for at least seven more years. In all, 2,347 Alabama babies were born in 1939 neither of whose parents was old enough to vote.

In Alabama, with its abnormally high birth rate, mothers average an unusually large number of babies each. Of the already mentioned 61,323 couples who had babies in this state in 1939, 15,380, or more than one-fourth, had previously had at least four other babies. Of that total, 4,350 had had four, 3,286 had had five, 623 had had ten, 29 had had 15, and two had already had 21 babies. Moreover, nearly one-third of all the stillbirths reported during that year involved mothers who had already given birth to four or more babies. Fifty-seven had already given birth to nine babies, 18 of them had given birth to 13 babies, three of them had given birth to 17 babies previously, and, had it lived, one baby would have been its mother's twenty-third child.

BUREAU OF SANITATION

D. S. Abell, M. S. in S. E., Director

SMALL SEWAGE TREATMENT PLANTS

OPERATION AND MAINTENANCE

A number of failures have been reported in small sewage plant installations. These failures can invariably be traced to the lack of understanding on the part of the operator for the necessity of proper operation and maintenance or the overloading of these plants with domestic or industrial wastes. With good operation the plant may take care of some overloading; however, there is a limit to the plant's capacity and before this is reached a study of the local problems should be made by a capable engineer experienced in sewage-plant design. His recommendations following the study should be carried out.

It is recognized that sewage treatment must rely upon natural forces for the destruction or stabilization of the waste material without becoming objectionable. To understand and control these natural processes has been an important objective of sanitary research. This article will describe only the fundamental principles of these forces in the assimilation of organic materials by bacteria or other small organisms.

The general processes involved in sewage treatment plants may be classified as follows: (1) separation of the suspended matter from the liquid sewage by use of sedimentation tanks, (2) removal of the putres-

cible organic matter in the liquid sewage by use of subsurface disposal fields, trickling filters and many other processes, (3) transformation of the sewage sludge to a condition of stability by bacterial action, and (4) destruction of the bacteria from the liquid effluent by the use of chlorine.

The bulk of the settling solids, including much of the suspended organic matter, requires low velocities and relatively long periods of time for settling, while fine suspended matter requires methods other than settling for removal. There are three common types of tanks for removing the settleable solids. They are septic tanks, Imhoff tanks, and settling tanks which are used in connection with separate sludge digestion tanks.

The septic tank is a single compartment tank in which both settling and sludge digestion, or septic action, take place. These tanks are commonly designed to retain the sewage and the sludge for longer periods than other types of tanks. The detention period of the sewage varies from twelve to twenty-four hours. The sludge is allowed to remain in the tank for long periods of time, usually one year or longer, giving opportunity for *anaerobic* bacterial action. (Anaerobic action takes place where oxygen is absent.) The bacterial action liquefies and gasifies some of the organic matter and the amount of sludge to be handled is in this way reduced. This action cannot be depended upon to render the sewage safe so far as infection is concerned, and it is necessary to further treat the effluent unless large streams (at least sixty times the quantity of sewage) are available.

The Imhoff tank is in effect a two-story septic tank. The upper compartment is the settling chamber through which the sewage flows while settling takes place. The lower compartment is the sludge digestion chamber into which the solids settle and undergo digestion. The tank is so constructed that the gases given off during digestion are deflected through the gas vents and thus prevented from rising through the settling sewage. If gas bubbles are permitted to rise through the settling chamber as occurs in the septic tank interference with settling will result. The effluent and digested sludge from this type of tank is generally in less objectionable condition than from the septic tank due largely to the separation of

the sludge during digestion. However, the effluent, without further treatment, cannot be considered safe.

The plain settling tanks, with separate sludge digestion tanks, are generally provided with mechanical sludge-removal devices. The sludge is removed before septic action takes place and the gas is not allowed to lift the solids through the flowing sewage. The effluent from sedimentation tanks still contains quantities of putrescible organic matter in suspension and solution.

There are certain methods of treatment in which living bacteria and other small organisms convert the unstable colloidal, dissolved or finely suspended organic matter contained in the effluent from the settling tanks into a more stable form. These biologic processes are extremely complex. Maintenance of aerobic conditions (with oxygen) is essential to the success of this type treatment. The subsurface disposal fields have been satisfactory for disposing of the septic tank effluent. Trickling filters have been installed to treat the effluent from Imhoff tanks and clarifiers. The sewage is applied to the trickling filter beds by spraying it onto the beds through fixed nozzles or by the use of travelling sprinklers. The effluent from these filters is not always clear and should be passed through settling basins before discharged. These basins are known as secondary clarifiers.

Certain bacteria and other organisms find in sewage solids an abundant food supply. The organisms utilize the food substances obtained in the sludge in its original form or produced in the course of decomposition. As food elements are used up, the sludge becomes more stable and its final state is offensive neither to sight nor smell. Sludge digestion is an anaerobic process (without oxygen) and is best when the raw solids are seeded with well-digested material. Seeding inoculates the raw solids with the proper bacteria and serves to control the reaction of the culture medium. Artificial adjustment, the addition of lime, may have to be resorted to when the reaction is not satisfactory. The digested sludge is usually drawn off and dried on sludge drying beds. The dried sludge may be used as a fertilizer or is well adapted for filling in low areas.

None of the processes described can be relied upon to furnish an effluent free from pathogenic (disease) organisms, despite the

relatively high degree of purification obtained by the best processes. In order to protect oyster beds, waterworks interests, or bathing beaches, the final effluent is sometimes disinfected. Disinfection is obtained by means similar to those used in water purification. Liquid chlorine and hypochlorites are the most common chemicals used.

The maintenance of the septic tank and the method of operating the Imhoff tank as suggested by the Bureau of Sanitation are given below. No attempt will be made in this article to suggest methods for operating the clarifier, digester, or trickling filter since there is no uniformity in their design or of equipment used.

MAINTENANCE OF THE SEPTIC TANK

Grease which enters a septic tank does not digest and causes the scum mat to become very dense, thereby interfering with the proper digestion of the solid matter and requiring frequent cleaning of the tank. The entrance of household grease into the tank may be prevented by placing a grease trap on the sewer from the kitchen sink.

When the sludge in the tank has collected in sufficient quantity to reduce the liquid capacity of the tank more than thirty per cent, it becomes necessary to remove it. This should not occur more than once every twelve months in a proper-sized tank. The septic tank design is usually calculated to accommodate one year's accumulation of sludge. In some instances cleaning is not necessary at the end of the period. Depending upon the degree of use of the tank, sludge removal is necessary in one to three years. Sludge removal should take place only during the winter season when flies are absent.

The procedure in cleaning the tank is begun by removing the covers. The liquid can be pumped or bailed out; or if a drain has been provided under the tank, it can be flushed through this outlet. Provision should be made for the safe disposal of this liquid; the sludge and scum mat which remain should be removed and buried.

OPERATING SCHEDULE FOR IMHOFF TANKS

Daily

1. Visit the plant.
2. Give every part of the plant careful inspection.

Weekly

1. Break up scum in gas or scum chamber with hose or rake.
2. Measure depth of sludge in sludge chamber and record depth.
3. Clean inlet and outlet channels and weirs.
4. Skim the sedimentation chamber. This chamber should always be free of scum. Skimmings should be disposed of by burial or into gas vents.
5. Squeegee or scrape the side walls, sloping bottom and slot.
6. Operate all valves to keep them in working order.

Never

1. Never fill the tank with sewage when empty. Use water.
2. Never unnecessarily agitate the contents of the sedimentation chamber.
3. Never by-pass sewage from the tank without recording the reason, date and duration and notifying the State Department of Public Health.
4. Never run out large amounts of sludge at one time; better, small amounts every two to six weeks.
5. Never withdraw all the ripened sludge. Some should be left for seeding the tank.
6. Never fill the sludge bed to a depth of more than twelve inches.
7. Never allow the sludge to rise in the sludge chamber nearer than two feet to the slot.
8. Never allow weeds and grass to clog the surface of the sludge drying bed.

C. W. W.

Adolescence and Public Health—Heretofore it has been customary to think of health and sanity as something that was lost by some mysterious process, or was taken away as punishment for the individual's wickedness and unworthiness. There is a growing realization coming from various investigations and intensive studies that health and sanity have to be achieved by meeting the demands and the tasks of life with vitality and courage. This appears very clearly in the life of adolescents and therefore makes the second decade an important period for preventive medicine and mental hygiene, provided we can devise programs adequate to the needs and requirements of adolescents.

It begins to appear that in the larger task of health care, the care and guidance of our adolescent population will increasingly demand the utmost of our knowledge and courageous planning for the future.—*Frank, Am. J. Pub. Health, Nov. '41.*

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1941		
	Sept.	Oct.	Estimated Expectancy Oct.
Typhoid	38	19	35
Typhus	43	32	48
Malaria	1011	781	1036
Smallpox	0	1	0
Measles	66	67	16
Scarlet fever	74	161	117
Whooping cough	66	65	66
Diphtheria	112	144	204
Influenza	17	58	93
Mumps	23	22	32
Poliomyelitis	194	71	6
Encephalitis	3	1	2
Chickenpox	2	9	19
Tetanus	3	4	7
Tuberculosis	232	203	250
Pellagra	11	10	25
Meningitis	2	3	3
Pneumonia	41	70	95
Ophthalmia neonatorum	4	2	1
Trachoma	1	0	0
Tularemia	0	0	0
Undulant fever	4	11	4
Dengue	0	2	0
Amebic dysentery	1	1	0
Cancer	168	156	0
Rabies—Human cases	0	0	0
Positive animal heads	12	18	---

*As reported by physicians and including deaths not reported as cases.
The Estimated Expectancy represents the median incidence of the past nine years.

Woman's Auxiliary

Mrs. F. C. Smith, Chairman
Press and Publicity Committee

The Executive Board of the Woman's Auxiliary to the Association met at the home of Mrs. J. R. Horn, State President, in Bessemer. After a delicious luncheon, a business meeting was held when Mrs. Horn outlined the year's work, and officers made plans for their causes. The Auxiliary will assist in every way with the movement for cancer control. Those present were Mrs. O. R. Grimes, President-Elect, and Mrs. J. O. Finney, Third Vice-President, from Gadsden; Mrs. W. M. Salter, Historian, Mrs. Gerald Woodruff, Program and Mrs. N. T. Davie, Medical and Surgical Relief, Anniston; Mrs. George Denison, Treasurer, Mrs. R. E. Tyler, Finance Officer, Mrs. D. H. Sparks, Hygeia, Mrs. E. M. Norton, Memorial, Mrs. Huey Green, Legislative and Mrs. Paul Shannon, President, Jefferson County Auxiliary, Birmingham; and Mrs. J. R. Chandler, Corresponding Secretary, Mrs. C. J. Colquitt, Research in Romance of Medicine, and Mrs. F. C. Smith, Press and Publicity, Bessemer. Other officers and committee

chairmen not present were Mrs. J. Mac Bell, First Vice-President, Mobile; Mrs. James Jordan, Second Vice-President, Huntsville; Fourth Vice-President, Mrs. Hugh Gray, Anniston; Mrs. A. M. Cowden, Recording Secretary, Mobile; Miss Claude Sims, Auditor, Talladega; Mrs. DeWitt Faucett, Archives, Gadsden; Mrs. E. S. Sledge, Lettie Daffin Perdue Fund, Mobile; Mrs. Mercer Rowe, Jane T. Crawford Memorial, Gadsden; Mrs. C. F. Lewis, Public Relations, New Merkle; Mrs. A. C. Branyon, Exhibits, Fayette; and Chairmen of Special Committees, Mrs. Emmett Frazer, Mobile, Nominating; and Mrs. Jerome C. Chapman, Parliamentary Referee, Birmingham.

* * *

The Advisory Board to the Woman's Auxiliary, selected by the President of the Association, Dr. J. M. Mason, is composed of the following doctors: Dr. N. T. Davie, Chairman, Anniston; Dr. M. Y. Dabney, Birmingham; Dr. J. D. Perdue, Mobile; Dr. Douglas L. Cannon, Montgomery; and Dr. J. P. Chapman, Selma.

* * *

The Woman's Auxiliary to the Talladega County Medical Society held its first meeting at the home of Mrs. C. L. Salter on October 21. At the business meeting it was decided that the Auxiliary would devote its time to the nursery of the local hospital. At each meeting the ladies will sew for the nursery making garments and other necessary equipment needed. The chief objective this year will be to raise funds for the purchase of an incubator for the nursery and a benefit card party was planned to help with the funds. Officers for the year are President, Mrs. A. F. Toole; Vice-President, Mrs. E. B. Wren; Secretary, Mrs. E. B. Teague; and Treasurer, Mrs. D. P. Dixon. Committee chairmen are as follows: Lettie Daffin Perdue Fund, Mrs. E. B. Wren; Program, Miss Claude Sims; Hygeia, Mrs. Herman Nagles; Jane Todd Crawford, Mrs. B. B. Simms; Legislative, Mrs. C. L. Salter; Public Relations, Mrs. E. B. Teague; Research in Romance of Medicine, Mrs. Fred Boyd; and Health Education, Mrs. Sumner Davis. The membership of the Auxiliary is 16.

* * *

A meeting of the Auxiliary to the Calhoun County Medical Society was held at the Axis Club in Zinn Park with Mrs. Gerald Woodruff presiding. The invocation was by Mrs.

William Boozer, after which the minutes were read by Mrs. J. M. Kimmey and Mrs. Boozer gave the treasurer's report, stating that the Auxiliary fund amounted to \$9.82 and the fund for the prenatal clinic was \$202.20. The guest speaker for the occasion was Dr. J. M. Kimmey, and other guests present were Mrs. L. B. Sparkman and Mrs. Hayward L. Moore. Members attending were Mrs. Hugh Gray, Mrs. M. G. Shipp and Mrs. N. T. Davie, Anniston; and Mrs. James Williams and Mrs. J. D. Rayfield of Jacksonville. During the business meeting Mrs. L. R. Dunbar of Atlanta, Mrs. Clifford G. Arbery, Huntsville, and Mrs. George A. Cryer, Tuscaloosa, were made honorary members.

Officers of the Auxiliary are Mrs. G. G. Woodruff, President; Mrs. James Meigs, Vice-President; Mrs. J. M. Kimmey, Secretary; Mrs. W. H. Boozer, Treasurer; Mrs. I. P. Levi, Corresponding Secretary; and Mrs. Horace Leyden, Historian.

* * *

The Bessemer Auxiliary met on November 12 at the tearoom of Mrs. Willie Childress with Mrs. G. W. Williamson and Mrs. J. R. Pow as hostesses at a delightful luncheon. At the business meeting the Auxiliary voted to have a shower of clothing and other needed articles for the nursery school in the city. The milk fund which has always been given by the Auxiliary was voted to be increased also. Mrs. J. R. Horn, State Auxiliary President, spoke of the importance of Hygeia in the community centers as well as the schools, and the Auxiliary planned to have a drive for subscriptions among the families in Bessemer. Members attending were, besides the hostesses, Mrs. Clay Ragsdale, Sr., Mrs. G. J. Roscoe, Mrs. J. R. Horn, Mrs. H. C. Springer, Mrs. C. J. Colquitt, Mrs. W. N. Payne, Mrs. F. C. Smith, Mrs. E. B. Durrett, Mrs. R. E. Lilly, Mrs. A. E. Orton and Mrs. A. W. Davidson.

Let the will break down and surrender, hope flies, and despair, like a ravenous vulture, tears out the vitals. Success in life depends more upon a strong, persevering will than upon talent, fortune or favorable circumstances. What is talent without it? It is like the coruscation of a vivid but transient flash of lightning; it dazzles, only to make the darkness that follows more felt. But, with a persevering will, it glows, burns and blazes like the steady light of a noonday's sun. Of what avail are fortune and favorable circumstances without it? At most, they only furnish a comfortable hive for drones.—*Hill, Trans. M. A. S. A., 1897.*

Book Abstracts and Reviews

Synopsis of The Preparation and Aftercare of Surgical Patients. By Hugh C. Ilgenfritz, A. B., M. D., Instructor in Surgery, Louisiana State University School of Medicine; Visiting Surgeon, Charity Hospital of Louisiana at New Orleans, and Rawley M. Penick, Jr., Ph. B., M. D., F. A. C. S., Professor of Clinical Surgery, Louisiana State University School of Medicine; Visiting Surgeon, Charity Hospital of Louisiana at New Orleans. With foreword by Urban Maes, M. D., D. Sc., F. A. C. S., Professor of Surgery and Director of the Department, Louisiana State University School of Medicine; Senior Visiting Surgeon, Charity Hospital of Louisiana at New Orleans; Consulting Surgeon, Touro Infirmary. Cloth. Price, \$5.00. Pp. 532, with 55 illustrations. St. Louis: The C. V. Mosby Company, 1941.

In this book, limited to preoperative and postoperative treatment, a great deal of space is given to subjects which might be considered elemental to one accustomed to thinking for himself along preoperative and postoperative lines. It would seem particularly valuable to interns and residents and those in the early stages of a surgical practice. There are, however, sufficiently valuable sections to make the purchase of the book at the relatively small cost seem warranted.

General preoperative and postoperative care is discussed first, with treatment of postoperative complications given a prominent consideration. A portion of the book is devoted to a number of organic diseases as they relate to surgery. The reviewer feels that it is a good book to have access to.

J. L. B.

The Art and Science of Nutrition. By Estelle E. Hawley and Grace Carden. Cloth. Price, \$3.50. Pp. 619. St. Louis: The C. V. Mosby Company, 1941.

This book includes material on normal nutrition; food requirements under special conditions; diet therapy; the choice, preparation and serving of foods; and an appendix.

It is well written, scientifically accurate according to the most reliable authorities, except possibly for a few minor details, and teachers of student nurses will find it suitable as a basal or supplementary textbook.

The illustrations are well chosen and support the material presented quite adequately. The tables and references included in Parts 4, 5, and 6 enhance the usefulness of this book as a text, laboratory manual or reference.

The fundamentals of nutrition are so convincingly presented that additional study is encouraged.

A. T.

Infantile Paralysis: A Symposium Delivered at Vanderbilt University, April 1941. Cloth. Price, \$1.25. Pp. 239. New York: National Foundation For Infantile Paralysis, Inc., 1941.

This book is a series of six lectures delivered at Vanderbilt University, April 7th through the 16th, 1941 under the auspices of the National Foundation for Infantile Paralysis. The lecturers were Paul F. Clark, Ph.D., Professor of Bacteriology, The University of Wisconsin Medical School; Charles Armstrong, M. D., Senior Surgeon, United States Public Health Service; Thomas M. Rivers,

M. D., Director, The Hospital of the Rockefeller Institute for Medical Research; Ernest W. Goodpasture, M. D., Professor of Pathology, Vanderbilt University School of Medicine; John R. Paul, M. D., Professor of Preventive Medicine, Yale University School of Medicine; and Frank R. Boer, M. D., Clinical Professor of Orthopedic Surgery, Harvard University Medical School.

Dr. Paul F. Clark discussed the history of poliomyelitis up to the present time. The first recorded outbreak mentioned was in 1835. Badham reported four cases in Worksop, England. In 1840, J. Heine, Germany, reported 27 cases in his monograph. Bull in Norway reported a group of cases in 1868; and in 1890, Medin in Sweden made a report of 44 cases. He noted that the disease was an acute infection and distinguished the bulbar, ataxic, encephalitic and polyneuritic types as well as the spinal form. In 1894, Caverly, Vermont, made mention of the nonparalytic or abortive cases. Wickman, 1905-11, made a study of the epidemic in rural Sweden and emphasized the importance of abortive cases as well as the normal carriers in the spread of the infection.

A review is given of the reported epidemics. From a study of the epidemics it has been noted that "both sporadic and epidemic prevalence reach the maximum during the late summer and early autumn months, with the lowest point in the midwinter." The epidemics often show a fast spread over wide areas but the attack rate seldom runs above one in a thousand except in small outbreaks in sparsely settled areas. The outbreaks usually decline within a few months although only a small proportion of the population has shown any evidence of an attack. "However, there is a high incidence of specific immune bodies in the blood of our populations which suggests the almost universal spread of the virus and high percentage immunity." Endemic rates are usually higher in the urban areas. In large centers of population a striking age distribution has been noted. "Children under 5 years of age, constituting 9-12% of the population, furnish 50-90% of the cases." More males than females are noted in all age groups. Dr. Clark briefly discussed the etiology of poliomyelitis, resistance and immunity, pathology, and sources and modes of infection.

Dr. Charles Armstrong's lecture was on the etiology of poliomyelitis. It was at first believed that some type of bacteria was the cause of infantile paralysis. Different types were isolated such as cocci, diplococci and streptococci. For a time it was believed that they had some etiologic significance. In 1913, Flexner and Noguchi isolated the so-called globoid bodies which received attention for a while. Rosenow still believes streptococci are of etiologic significance. Most investigators fail to be convinced that streptococci are of primary causal significance.

Dr. Armstrong gave also some of the characteristics of the poliomyelitis virus, which will not be discussed in detail here. "Poliomyelitis virus is a pathogenic agent whose identity is in large part determined by the symptoms and pathology which it produces in man or in experimental animals and by its epidemiological and immunological characteristics."

Many studies have been made in an effort to determine the distribution of the virus in man. Landsteiner and Popper in 1908-09 revealed the existence of the virus in the spinal cord of a poliomyelitis victim. At some stages of the infection it may be widely distributed throughout the central nervous system. There is a correlation between the quantity of virus and the nerve cell destruction. The virus effect seems to be due to the direct action of the virus upon the susceptible cells rather than to the indirect effect of a circulating toxin. The nerve cell seems to be the place of multiplication for the virus. The virus has been demonstrated in the tissues other than the nervous system. It has been found in the tonsils, adenoids, and nasopharyngeal mucosa, mesenteric glands, salivary glands and in a pool of axillary and inguinal glands of man, as well as in a pool of lungs, liver, spleen and kidney, in the washed walls of the ileum and colon, and in the contents of each of the latter two organs. Active virus has been recovered from the nasopharyngeal secretions as much as four months after the acute attack and in the stools for as long as 123 days after an abortive attack. It is more readily recovered with present methods from the feces than from the nasal secretions. He discussed the infectivity of the virus for experimental animals, tissue specificity, the cultivation of the virus and the strains of poliomyelitis virus. No general immunologic classification of recovered strains has been attempted even though it has been recognized that the strains differ from one another. "In spite of repeated trials employing the virus of poliomyelitis no specific diagnostic test of value has been evolved."

Dr. Thomas Rivers gave a paper on the immunologic and serologic phenomena in poliomyelitis. A review was given of the attempts that have been made to produce both an active and passive immunity, but all efforts have proved disappointing. "The story of immunization of monkeys and human beings against poliomyelitis by vaccination is full of tragedy and disappointment."

Dr. Ernest Goodpasture's paper was on the pathology and pathogenesis of poliomyelitis. He gave a brief summary of the historical development of the present day knowledge of poliomyelitis. The studies that have been made concerning the pathology and pathogenesis of the disease were given. He stated that "experimental poliomyelitis in monkeys has thus equipped us with many new facts and novel points of view with which to consider the pathology and pathogenesis of the human disease. Not only has it demonstrated the general character of the etiological agent, but it has confirmed the impression of many that the disease is primarily an infection of the nervous system and not a secondary or accidental involvement of it following a general extraneural infection, that the nerve cells themselves are the primary seats of injury and are not merely secondarily damaged by inflammatory exudation and infiltration; that the infectious agent is located within the neurones themselves spreading mainly by means of the infected processes of nerve cells rather than through the

body humors." The lesions in the human central nervous system, most observers believe, are never confined to the spinal cord, but are usually widely distributed through the medulla oblongata, pons, midbrain and in the motor areas of the precentral gyrus of the cerebral cortex. Investigators for the most part are accepting the hypothesis of the neurotropism of the virus and axonal spread of the infection. Despite all the knowledge that is known concerning what happens after the virus enters the body "the very important practical problem of a portal or portals of entry for the virus in the natural human disease remains unsolved." This paper contains sixteen pictures of microscopic sections taken from various parts of the nervous system of several poliomyelitis cases.

Dr. John R. Paul's lecture was on the epidemiology of poliomyelitis. This is a very complete and interesting paper. He briefly reviewed the history of poliomyelitis as an epidemic disease. Poliomyelitis is worldwide and it has been said that no country from which records are available is known to be free from it. Sporadic cases or epidemics may occur any month of the year but it is unusual for epidemics to occur before warm weather begins. "According to several authorities not only is poliomyelitis a summer disease but it is also a rural disease." Opinions are conflicting as to whether the infection is more apt to occur during dry summers or wet summers. For some reason or another the age incidence of poliomyelitis seems to have undergone certain changes with the past twenty years. There seems to be an increase in the tendency of poliomyelitis to attack the higher age groups. Dr. Paul's paper contains several interesting charts regarding the age incidence of poliomyelitis cases. He discusses abortive poliomyelitis and family epidemics. The portals of entry and exit of the virus are considered. He cites some interesting studies that have been made on sewage during, after and between epidemics.

Dr. Frank Ober considered the treatment and rehabilitation of the poliomyelitic patient. He briefly took up the treatment in the acute, convalescent and chronic stages. He mentioned the deformities due to poliomyelitis and the operative treatment to correct deformities and improve function.

At the end of the book there are twenty-one pictures showing various splints used in the treatment of poliomyelitis cases and some of the deformities that have resulted from the infection.

A complete bibliography was given.

B. M. B.

School Health Services. By W. Frank Walker, Dr. P. H.; and Carolina R. Randolph. Cloth. Price, \$1.50. Pp. 172, exclusive of appendix. New York: The Commonwealth Fund, 1941.

A study was made of the conduct of school health services in six counties in Tennessee as a representative cross section of the entire state. It was conducted by the Tennessee Department of Public Health and the Commonwealth Fund, and extended over a six-year period. Some 58,000 children were included. The purpose of the

study was to attempt to determine the effectiveness of school health services. It was hoped that the following questions might be satisfactorily answered:

1. Is there evidence that repeated medical examinations influence the extent of correction of physical defects?
2. Is there evidence that nursing follow-up with or without repeated examinations influences the correction of physical defects.
3. To what extent are the same defects recorded on repeated examinations without correction?
4. Is there evidence that the presence of parents at the time of physical examination influences the correction of physical defects?
5. Is there evidence that the health status of children entering school has changed in recent years?
6. Is there any significant difference in the physical condition of children at time of first examination who have had some preschool supervision by the health department and those who have not?
7. Is there a significant difference in the physical status of children leaving elementary school in recent years?

The authors describe in detail the procedure followed in making this study. The conclusions arrived at after the study were as follows:

1. It is not the function of the school service alone to prevent or correct defects. In the early years of a community health service, the health department may devote much effort to the examination of school children of all ages, but to continue such service is wasteful and shortsighted. Emphasis should be placed on the development of children free from physical defects at the time they enter school. A health department undertaking a school health service must recognize the importance of the physicians, dentists and the community as a whole working together if the most desirable results are to be accomplished.

2. Ample evidence was obtained to prove the importance of having the parents present during the time of the examination. This is especially important for the younger age groups.

3. Focusing the attention of children and parents upon obtaining a certain health status expressed in objective terms such as a button, ribbon or badge seemed to stimulate parents and children to action which they would otherwise not have taken.

4. "There is a significant difference in defects of teeth and throat for children who have had, and those who have not had, health department supervision before school entrance. No difference is noted with regard to visual defects, or, interestingly enough, with regard to nutrition defects."

5. A school health program contributes to the control of communicable diseases.

6. Multiple examinations do not appear to be a factor in securing corrections except for visual defects.

7. A nursing visit during the school period did not seem as effective in securing correction of defects as the parent's presence during the exami-

nation. If the parent was not present, then her home visit seemed to increase the number of visual and throat corrections but not dental corrections.

8. Services for dental treatment are very important but the routine inspections of school children by dentists or dental hygienists as a part of the school health program seems a waste of time.

9. The defects of vision show a uniform attack rate throughout school age. There should be tests of vision at regular and frequent intervals throughout the elementary and high school period.

10. A routine examination does not tell much regarding the condition of a child's tonsils. More reliance must be placed upon the history of the child and the observations of the teacher and nurse over a period of time.

11. History of the child and observation over a period of time may help to eliminate errors of a hasty judgment concerning the child's nutritional status.

12. The heart findings should be included in at least the first school examination.

13. The incidence of dental, throat and nutrition defects among the six year-old children entering school in 1936 as compared with 1930 shows a significant drop. There is no improvement in vision in this age group.

In the last chapter Dr. Walker and Miss Randolph give what they believed should constitute a school health program.

The appendices contain the following:

A. Development of school health services in Tennessee.

B. Health department procedures relative to the school services.

C. Tables.

B. M. B.

Functional Pathology. By Leopold Lichtwitz, M. D., Chief of the Medical Division of the Montefiore Hospital; Clinical Professor of Medicine, Columbia University, New York. Cloth. Price, \$8.75. Pp. 570, with 198 illustrations, charts and tables. New York: Grune and Stratton, Inc. 1941.

Lichtwitz's *Functional Pathology* is based upon thirty years of study and observation by the author of pathological clinical manifestations which result from various disease processes. This is not a textbook of gross anatomic or microscopic pathology, but rather it deals with the analysis of signs and symptoms and judges these in relations to the various organs and to the individual as a whole. The theories of the various functional disorders of heat regulation, carbohydrate metabolism, body water, thyroid, essential hypertension, etc., are explained in a clear logical manner. The author has written this text from a personal viewpoint and his theories may not harmonize with present prevalent teaching. This then offers to the student a new approach of thought, and stimulates discussion of functional disease.

The text consists of 538 pages divided into 28 chapters; each dealing with a different functional disease. A number of chapters are devoted to the mechanics of defense, arthritis, blood diseases and renal disease. The material is well organized and

very adequately illustrated by charts, clinical photography, and copies of radiographs. It offers a challenge to the practitioner to reorganize his mental catalogue of functional processes and their disorders and disease.

C. R. L.

The Doctors Mayo. By Helen B. Clapesattle. Cloth. Price, \$3.75. Pp. 712, exclusive of 100 pages of notes and index. Minneapolis: The University of Minnesota Press, 1941.

"Forgive my grief for one removed,
Thy creature, whom I found so fair.
I trust he lives in thee, and there
I find him worthier to be loved."

Thus wrote Lord Tennyson after the death of his friend Arthur Hallam, and so might thousands who knew and loved them have written of each of the Doctors Mayo—honored "where'er the sun doth his successive journeys run," because

"Along the cool, sequester'd vale of life
They kept the noiseless tenor of their way."

That settled course, approaching self-effacement, and responsible for the fact that *The Doctors Mayo* was not written earlier, runs like a golden thread through this saga of men and medicine, to commend it to all those who yet feel they have a common heritage in Hippocrates.

Many there are in Alabama now who can recall Dr. Will's appearance before the State Medical Association in 1917, and Dr. Charlie's in 1922. They live again in Helen Clapesattle's book—another monument to the Mayos, "a living memorial in their own image."

This intensely appealing story of a wise father and his gifted sons is commended to everyone "as one of the great biographies of American life."

D. L. C.

Profitable Publicity, How To Do It, How To Get It. By Henry F. Woods, Jr., Director of Publicity, McCann-Erickson, Inc. and Director, National Association of Publicity Directors. Cloth. Price, \$2.50. Pp. 208. New York: Dorset House, Inc., 1941.

Apparently Mr. Woods did not have the medical profession particularly in mind when he wrote this book. Members of many other professions feel in greater need of assistance from the press than do the men of medicine, who have various other means of increasing their professional stature. Nevertheless, the fact remains that any number of nationally known physicians would hardly be heard of outside their own communities had they not been favored by what is known as "a good press." Nor is there any doubt that much of the prestige enjoyed by the American Medical Association, the New York Academy of Medicine and the Mayo Clinic, to mention only a few, is due to their wise use of publicity.

Mr. Woods might be called the Mrs. Emily Post of the publicity business. Like the unimpeachable social authority who tells you how to handle a salad fork or how to ditch in a graceful manner a hopelessly unpopular wallflower at a dance, he gives detailed instructions as to what should be done and what avoided. If, in Mrs. Post's eyes, it

is an offense against good manners to leave your partner in the middle of the ballroom floor, it is no less an offense against the canons of wise publicity, in Mr. Woods' eyes, to invite an insufferably dull speaker to lay the cornerstone of your new hospital or address your county medical society—that is, if you expect to see more than the barest mention of your cornerstone-laying or meeting in the papers the next morning.

Even the doctor or other professional man who prefers to do his work without benefit of publicity can benefit from reading a book like this. For whether you stay out of the papers or see your name splashed across the front pages is not entirely for you to say, as any number of prominent people, including doctors and surgeons, have found out to their chagrin. It is just as important for some people to dodge unfavorable publicity as it is for others—or for the same person under different circumstances—to get it. For good or ill, as long as we have freedom of the press, the newspapers will not assume a "by you leave" attitude toward those whose names or acts make news.

Fortunately, the person armed with a knowledge of the devious ways of publicity has a weapon which he can use in self-defense. Although he can seldom block the publication of a troublesome item after it has been written or is about to be written, that knowledge can at least enable him to avoid situations that cause embarrassment, or worse, when exposed to the public gaze in a page of type. This knowledge, too, can soften the blow if, through ignorance or bad judgment, he finds himself or something with which he is associated suffering from an overdose of printer's ink.

Mr. Woods has performed his task well. At the risk of seeming somewhat ABCish to those doctors and others who have more than an elementary knowledge of this business, his book gives the reader a comprehensive idea of the dangerous, as well as the helpful, potentialities of this powerful two-edged sword.

J. M. G.

Modern men, accustomed to strict asepsis in operative routine and surroundings, can scarcely credit the stories of pre-antiseptic methods, stories of men who operated in whatever coat or shirt they happened to be wearing, covering it perhaps with a linen duster or an apron stiff with the stains of previous operations; who stropped their knives on the soles of their shoes before they began and while using one knife held another ready between their teeth, its blade nestling among their whiskers.—*From the Doctors Mayo, Clapesattle, 1941.*

<p>NEXT MEETING OF THE ASSOCIATION MONTGOMERY APRIL 14-16, 1942</p>

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THYMOL THERAPY IN TUBERCULOSIS*

A PRELIMINARY REPORT

By

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The tubercle bacillus, as stated by Zinsser and Bayne Jones,¹ is one member of a large group of organisms which have in common certain morphologic features. When stained they have the ability to withstand decolorization by acid alcohol. Because of this property the organisms are called acid-fast. In their manner of growth they exhibit occasional branching, and, in the broad features of the lesions they produce in animals, there are many indications of a relationship of these acid-fast bacteria to the actinomyces.

Many investigators have noted similar relationships. Nocard and Roux² were first to observe growth by budding and to report branching forms. Metchnikoff³ described filamentous, club-shaped and branching tubercle bacilli. Thuringer, Butler and Wilber⁴ state that Fischel, who corroborated

Metchnikoff's findings, "must have suspected a relationship of this organism to the actinomyces, for he observed the same branching and thread formation in both mammalian and avian bacilli." These authors likewise state that "not only the branching but also the club-shaped thickening so frequently seen in the organism points to the relationship of the tubercle bacillus to the actinomyces."

In 1925 Myers and Thienes⁵ reported a case of actinomycosis successfully treated with thymol. In 1929, at the annual meeting of The Medical Association of the State of Alabama, H. B. Searcy⁶ reported a case of actinomycosis of the jaw which he successfully treated with oral doses of thymol. Since then he has similarly treated other cases with recovery. In several instances, when oral doses were not tolerated by the stomach, he has given intramuscular injections of the drug in olive oil with good results.

In 1938 Joyce⁷ likewise reported successful treatment in six cases of actinomycosis. In 1929 H. B. Searcy and Ralph McBurney⁸ reported ten cases of otomycosis successfully treated with local applications of thymol in alcohol. January 18, 1936 McBurney and Searcy⁹ presented a paper before the Southern Section of the American Laryngological,

*An original work from the Searcy Clinic, Tuscaloosa, Alabama; the Department of Bacteriology and Pathology, School of Medicine, University of Alabama; and the Searcy State Hospital, Mt. Vernon, Alabama. Received for publication December 3, 1941.

1. Zinsser and Jones: Textbook of Bacteriology, ed. 8, New York, D. Appleton-Century Co., 1940, p. 435.

2. Nocard, E., and Roux, E.: Ann. l'Inst. Past. 1: 19, 1887.

3. Metchnikoff, E.: Virchow's Arch. f. path. Anat., 113: 63, 1888.

4. Thuringer, J. M.; Butler, H. W., and Wilber, Gertrude H.: The Life Cycle of Mycobacterium Tuberculosis, Bull. University of Oklahoma Med. School, p. 10, 1937.

5. Myers, H. B., and Thienes, C. H.: Fungicidal Activity of Certain Volatile Oils and Stearoptens, J. A. M. A. 84: 1985-1986 (June 27) 1925.

6. Searcy, H. B., and McBurney, R.: Actinomycosis of Jaw and Aspergillosis of Ear Treated with Thymol, Trans. M. A. S. A. 1929, pp. 377-385.

7. Joyce, T. M.: Thymol Therapy in Actinomycosis, Ann. Surg. 108: 910-917 (November) 1938.

8. Searcy, H. B., and McBurney, R.: Actinomycosis of Jaw and Aspergillosis of Ear Treated with Thymol, Trans. M. A. S. A. 1929, p. 377-385.

9. McBurney, R., and Searcy, H. B.: Otomycosis; Investigation of Effective Fungicidal Agents in Treatment, Ann. Otol., Rhin. & Laryng. 45: 988-1008 (December) 1936.

Rhinological and Otological Society entitled *Otomycosis, and Investigation of the Effective Fungicidal Agents in Treatment*, citing the superiority of thymol over other drugs in vitro and in the treatment of one hundred and fifty cases. The reports cited gave ample proof of the value of thymol as a fungicide. They were subsequently substantiated by the work of Whalen,¹⁰ Dart,¹¹ and Minchew, Collins and Harris.¹²

In the summer of 1931 lumpy jaw developed in fifteen young steers on the farm of the Alabama State Hospital. Searcy dissected the cervical glands of these animals, cultures were made, and the diagnosis was confirmed by Dr. Hobson Davis, then of the Department of Bacteriology and Pathology of the School of Medicine, University of Alabama. Each animal was given one daily oral dose of fifteen grains of thymol in olive oil. Six weeks later they had gained in weight, were apparently well and were killed for beef. At this time, Dr. Searcy first proposed its use in tuberculosis.

In 1925, Karwacki and Biernacki¹³ showed that a concentration of 0.004 per cent of thymol in glycerin bouillon was inhibitory to the growth of the tubercle bacillus.

During the course of the experimental work on the fungicidal effect of thymol and other drugs, McBurney¹⁴ observed that cultures of the tubercle bacillus failed to grow when exposed to thymol vapors in the incubator.

More recently, McBurney and Louise Cason¹⁵ have found that these bacilli, exposed on cotton threads to the vapors from one gram of thymol, were killed in thirty minutes.

While the toxicity of thymol for man has been reported, the number of cases has been few. Barnes¹⁶ cites only two deaths occurring in more than 82,000 individuals treated in Siam where used as an anthelmin-

tic. He says: "It is well to call attention to the large number of cases of safe administration lest the real value of the drug be overlooked when its toxicity is emphasized."

Goodman and Gilman¹⁷ advise against its use in the presence of cardiac or renal disease, and Edens¹⁸ in goiter.

In view of its time-honored employment as an anthelmintic and of its successful use in actinomycosis we felt no hesitancy in advocating its use in cases of pulmonary tuberculosis where adequate control and observation were possible. Consequently, six non-cooperative, feeble and advanced cases in charge of Dr. Harry S. Rowe at the Searcy Hospital for Negro Insane, Mt. Vernon, Alabama, were given treatment. These patients were negro women in the women's tuberculosis ward.

Treatment was outlined and directed by Dr. Searcy, and begun on all patients September 23, 1941. The total daily dose was fifteen grains, one five-grain capsule of thymol being given after each regular meal with a glass of whole milk to facilitate absorption.

November 11th, seven weeks following initial treatment, these patients had improved to such degree that the daily dose was reduced to two five-grain capsules per day, one being given following the morning and evening meal respectively.

During treatment there was no change of environment or of the dietary regimen.

At the present writing they have been under treatment and observation for nine weeks. Apparently none of the patients has experienced any ill effects from the therapy instituted.

CASE HISTORIES

The case histories of each patient, collected and compiled by Dr. Rowe, are indicative of the results of the therapy instituted.

Case No. 1.—L. S.: Colored female, forty-two years of age, committed to the hospital August 13, 1934 with a diagnosis of mental deficiency.

17. Goodman, L., and Gilman, Alfred: *Pharmacological Basis of Therapeutics; a Textbook of Pharmacology, Toxicology and Therapeutics for Physicians and Medical Students*, New York, The Macmillan Company, 1941.

18. Edens, E.: *Warnung vor Thymol und Thymolhaltigen Mitteln, Mundwassern und Zahnpasten bei Kropfkranken*, Med. Klin. 28: 477-478 (April 1) 1932.

10. Whalen, E. J.: *Fungous Infections of External Ear*, J. A. M. A. 111: 502-504 (August 6) 1936.

11. Dart, M. O.: *Otomycosis; Treatment with Silver Picrate*, Arch. Otolaryng. 31: 885-910 (June) 1940.

12. Minchew, B. H.; Collins, B. E., and Harris, M. M.: *External Ear Disease with Special Reference to Fungous Type*, South. M. J. 33: 1345-1348 (December) 1940.

13. Karwacki, L., and Biernacki, S.: *Ann. l'Inst. Past.* 39: 476, 1925.

14. Unpublished results.

15. To be reported.

16. Barnes, M. E.: J. A. M. A. 79: 964-966, 1922.

On August 26, 1935 it was noted that the patient was beginning to show signs and symptoms of pellagra, and at this time she was also found to have some chest involvement.

Prior to starting thymol therapy the patient's temperature ranged from 102 to 102.5 every afternoon but when this treatment was started the temperature gradually fell, reaching normal for the first time October 18, 1941. Since then the temperature has remained practically normal. The patient has apparently experienced no ill effect from the thymol treatment, has gained weight steadily, seems stronger, and recently has been able to be out of bed most of the time.

The patient's temperature continues normal and her physical health is much improved. Blood sedimentation rate on November 26, 1941 was 20 mm. in 60 min.

Case No. 2.—F. T.: Colored female, about thirty years of age, was committed to the hospital February 23, 1940 with a diagnosis of dementia praecox.

On September 18, 1940 it was noted that she was beginning to show signs and symptoms of pellagra. She received treatment for this condition and her physical health improved.

On June 23, 1940 she was transferred to the tuberculosis ward because she coughed a great deal, had fever every afternoon, and had also lost considerable weight. She would not cooperate very well for physical examination but she was found to have some chest involvement. On June 25, 1941 her sputum was found to be loaded with acid-fast bacilli. A temperature chart, started September 4, 1941, showed that the morning temperature stayed about 100 degrees and the afternoon temperature between 102 and 103.

The patient has experienced no ill effect from the thymol therapy and her temperature has steadily declined until it became normal on October 9. From October 9 to October 30 she had some fever in the afternoons but since October 30 the patient's temperature has been practically normal. She has gained some weight, coughs very little and is apparently comfortable. She does not have intelligence enough to give a coherent statement, but she is able to be out of bed most of the day and seems to be gain-

ing strength. Her appetite is good and she rests well at night.

Her blood Wassermann was reported negative.

Blood sedimentation rate on November 26, 1941 was 5 mm. in 60 min.

Case No. 3.—A. B. M.: Colored female, about forty-five years of age, committed to the hospital March 28, 1940. She had been an inmate of the Colbert County Tuberculosis Home at Sheffield, Alabama, from September 13, 1939 until she was sent to the Searcy Hospital. While in the Home, Dr. A. G. Rice, following a chest plate examination, diagnosed her as a case of bilateral far-advanced pulmonary tuberculosis.

When committed to the Searcy Hospital she was quiet and cooperative, and talked and acted rationally. From the patient's statements it appeared that she was mildly excited at one time while in the Tuberculosis Home, but when committed to the Searcy Hospital she was considered mentally competent and a diagnosis of "not insane" was made. She did have some chest involvement but had no fever and repeated sputum examinations were negative for acid-fast bacilli.

The patient did very nicely and her physical health improved until September 1, 1941, when she developed a severe head cold. Examination of her chest showed some involvement which was suggestive of pulmonary tuberculosis, and she had some fever and coughed a great deal. Due to the fact that she was at one time in a tuberculosis sanatorium, she was placed in bed in the tuberculosis ward. She continued to have considerable fever and a severe cough. She lost weight, and became very weak, but examination of her sputum continued negative for acid-fast bacilli. A temperature chart was started September 4, 1941, at which time her temperature was 99.5, and in the afternoon of the same day her temperature went up to 100.5. Her temperature varied between 99 and 102 until thymol treatment was started, whereupon it steadily declined, reaching normal for the first time on October 7, 1941, and has since been practically normal. She has gained weight and strength and states that she feels very much improved. She takes her nourishment well and is apparently comfortable at all times. She is able to be out of bed most of the day.

Her blood Wassermann was reported negative.

Blood sedimentation rate on November 26, 1941 was 4 mm. in 60 min.

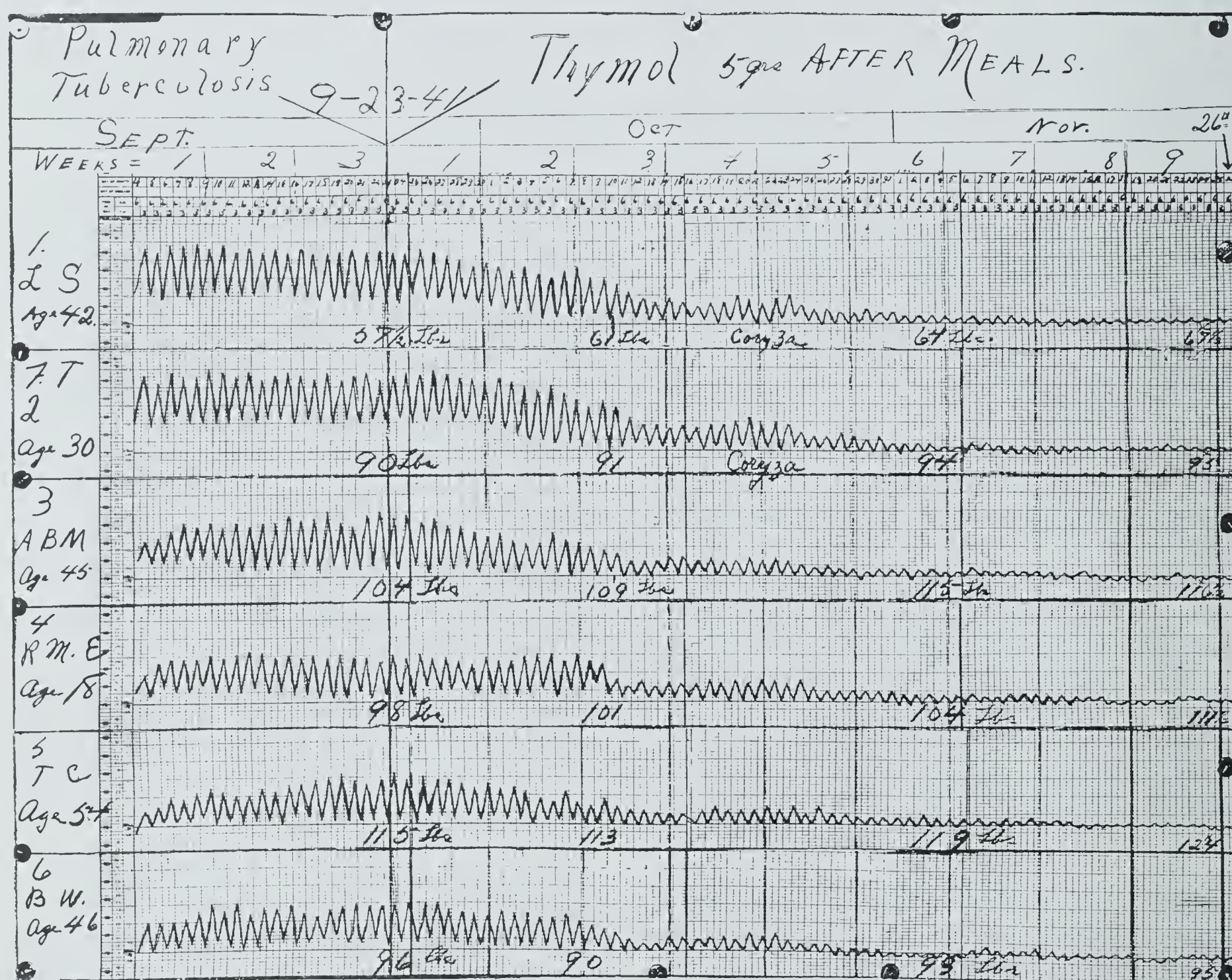
Case No. 4.—R. M. E.: Colored female, about eighteen years of age, was committed to the hospital July 9, 1940. Upon admission a diagnosis of dementia praecox was made.

During the first week of June 1941 she developed a cough with elevated temperature and lost weight. She was placed in bed in

tober 17, 1941. Since then it has remained practically normal. She has gained weight and strength and is able to be out of bed most of the day.

Her physical health has improved a great deal and she is apparently comfortable at all times. The nurse on the ward stated that the patient's appetite was much better and that she was more cooperative.

Her blood Wassermann was reported negative.



the tuberculosis ward June 7, 1941 because of a marked chest involvement. At that time a specimen of sputum was found to be loaded with acid-fast bacilli. She continued to have fever, to lose weight and to cough a great deal. A temperature chart started September 4, 1941 showed her morning temperature to be 99. Her morning temperature continued about 99 with an afternoon temperature of 100.5 to 101. Following thymol treatment her temperature has gradually dropped, reaching normal the first time Oc-

Blood sedimentation rate on November 26, 1941 was 14 mm. in 60 min.

Case No. 5.—T. C.: Colored female, about fifty-four years of age, committed to the hospital on March 22, 1929 with a diagnosis of mental deficiency without psychosis. During 1930 she suffered from pellagra. She was confined to bed for several months, receiving treatment for pellagra, during which time she became very weak. In April 1931 it was noted that she coughed a good

deal and was found to have some elevation of temperature in the afternoon. Examination of her chest showed a degree of involvement which was suggestive of pulmonary tuberculosis. On March 22, 1933 a specimen of sputum was found to be positive for acid-fast bacilli. She was confined to bed in the ward for tuberculous patients, was having fever every day and coughing. She lost considerable weight.

Before thymol therapy was started her afternoon temperature ranged from 99 to 101 but since then it has gradually dropped to normal and has been practically normal since October 24, 1941. She has gained weight and strength and is apparently comfortable at all times. She is able to be out of bed most all day, seldom complains of anything and seems to be much stronger in general. Her appetite has increased and she rests well at night.

Blood Wassermann was reported negative.

Blood sedimentation rate on November 26, 1941 was 7 mm. in 60 min.

Case No. 6.—B. W.: Colored female, about forty-six years of age, was committed to the hospital September 5, 1920. She was diagnosed as dementia praecox. She was placed in bed on June 27, 1927 because she had lost weight and her general physical condition was poor. She had also developed pellagra. Following the attack of pellagra she developed chest symptoms and was diagnosed as having pulmonary tuberculosis in July 1931, whereupon she was confined in bed in the ward for tuberculous patients.

A temperature chart, started September 4, 1941, showed her to have fever every afternoon.

Since starting thymol therapy the patient's temperature has gradually become normal. At the beginning of the treatment the patient's appetite was very poor. She lost weight for a few weeks but has gained weight recently and seems stronger and much improved physically. Her appetite is much better, she rests better at night, and is able to be out of bed a part of each day.

Her blood Wassermann was reported negative.

Blood sedimentation rate on November 26, 1941 was 10 mm. in 60 min.

The accompanying chart shows the weight and temperature curves of the six patients,

preceding and following the thymol therapy.

CONCLUSIONS

It is realized that the cases are few, and sufficient time has not elapsed to permit of more than conservative conclusions regarding this form of therapy in tuberculosis, yet, the marked similarity in the charts of these six cases is too uniform to be a coincidence, and the great improvement in the general condition of the patients is also too uniform to be considered due to anything other than thymol medication.

The beneficial effect of thymol medication in fungous conditions warrants the further study of thymol, thymol combinations and derivatives, in the mycobacterial diseases; i. e., tuberculosis and leprosy.

PATHOLOGIC LESIONS IN THE MACULA AND THE AREA CENTRALIS*

By

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Pathologic lesions which involve the macular area of the retina and the area centralis impair the central visual function in part or in toto according to their severity. Some few lesions may be temporary and go on to spontaneous healing; others are intermittent and recur with increased destruction, while the majority once present remain throughout the life of the individual, showing progressive macular destruction with loss of central vision.

When central vision is lost, the patient sees no better than 20/200 and is unable to read fine newspaper print. The form field which describes the status of the peripheral vision remains normal. Various entoptic phenomena are described by these patients, such as micropsia or macropsia and metamorphopsia. Often the patients are aware of central positive scotomas of variable size in proportion to their macular pathology. In some instances there is a temporary hyperopia which, when corrected with the proper convex spherical lens, restores central vision to nearly normal. Usually the general ocular examination most often discloses no patholo-

*Read before the Association in annual session, Mobile, April 15, 1941.

gy except for the insidious macular lesion. And often when such a lesion is identified all attempts fail to show concurrent disease.

The lesions bear special study and frequent reexamination to give an accurate evaluation of their character. The pupils are dilated with mydriatics and the fundi are studied with the ordinary ophthalmoscope or with Vogt's red-free light method which gives a greenish hue to the fundus, and makes apparent otherwise hidden macular lesions which are often yellow and iridescent, but lost in the surrounding yellow of the fundus and the brilliant light reflex. Also, the binocular ophthalmoscope gives a stereoscopic picture showing elevations or depressions if present. Serial photography with the Zeiss-Nordensen fundus camera has been employed, both plain and stereoscopic, to study such lesions.

The frequency of occurrence of macular degeneration is illustrated by the fact that only 134 cases were observed in a review of some 35,000 routine eye admissions.

The following is a classification of the lesions in the macula and the area centralis.

Trauma

1. Commotio retinae (Berlin's traumatic macular edema)
2. Rupture of the choroid (lamina vitrea)
3. "Hole"

Infection

1. Solitary tubercle
2. Central chorio-retinitis, metastatic
3. Luetic central retinitis

Central Idiopathic Retinal Detachment

1. Central serous chorio-retinitis (juvenile, macular, exudative, retinitis)
2. Central idiopathic flat detachment of the retina
3. Central angiospastic retinopathy

Degenerative

1. Disciform macular degeneration
 - Senile
 - Juvenile (juvenile, macular, exudative, retinitis)
2. Colloid deposits on Bruch's membrane
3. Circinate retinosis
4. Angioid streaks of the retina
5. Hemorrhage at the macula
6. Cystoid degeneration
7. Myopia with macular degeneration
8. Macular burn
9. Arteriosclerotic senile macular degeneration
10. Macular degeneration associated with occlusion of the central retinal artery

Hereditary Cerebromacular Abiotrophies

1. Amaurotic familial idiocy
 - Infantile form (Tay-Sachs)
 - Juvenile form (Vogt-Spielmeyer)

2. Cerebromacular degeneration—
 - Congenital type
 - Infantile type
 - Juvenile type
 - Senile type

Developmental

1. Coloboma

LESIONS REFERABLE TO TRAUMA

1. *Commotio retinae* (Berlin's traumatic macular edema). Many hours after a forceful injury or shock to the anterior surface of the eyeball a grayish-white spot appears in the macular region. It is larger in size than the disc, grayish in color, the margins are ill defined, and the center foveal area is red. Vision is reduced to 20/50 or 20/200 with the presence of a central scotoma for the first 24 hours, but soon begins to improve, and usually, within seven days, vision, fields and fundus pictures are normal, though some fine pigment and yellow-red patches may later appear as a permanent change.

2. *Rupture of the choroid* is really a rupture of the lamina vitrea of the choroid, which retracts leaving a crescentic pigment bordered area in which the sclera is visible. These are produced by a direct impact or by injury to structure adjacent to the globe. If the lesion involves the macula a central positive scotoma results with the visual acuity 20/200.

3. "*Hole*" in the macula. This type of lesion, again, is the result of concussion acting directly on the eyeball, which produces a round or oval break in the retina. With the ophthalmoscope it appears as a striking red hole in the center of the macular region. Usually the lesion is half the size of the disc, but not necessarily always right at the macula. When at the macula, a central positive scotoma and 20/200 vision exist as permanent findings.

INFECTION

1. *The isolated macular tubercle* may occur in tuberculosis as a large focal lesion with exudation. During the active phase it has a grayish-green color with diffuse cotton-like margins, and is elevated. The margins of the lesion occasionally show hemorrhages; vitreous opacities are usually present. These patches heal in time, leaving a large, atrophic and pigmented scar simulating macular coloboma.

This type of central chorio-retinitis occurs in persons usually not showing signs of

active pulmonary tuberculosis, but with a positive Mantoux and latent active foci in the hilar lymph nodes. It is more common in young people and the lesion has a chronic course; often both eyes become affected.

2. *Metastatic macular isolated foci of chorio-retinitis.* These lesions occur in certain endogenous infections where septic emboli detach from the diseased part and are swept by the blood stream into the vessels of the retina and choroid.

The fundus picture shows an inflammatory lesion which appears as a yellowish-white spot about half the size of the disc or larger. At first, the retina is raised over the lesion; later, pathologic pigment appears to have migrated into and about the lesion. After several weeks the exudate is absorbed and in its place the choroid and retina lose their normal structures and are transformed into a white spot of connective tissue rimmed with pigment. Some large choroidal vessels may be seen within this atrophic area; there are recurrences.

3. The cases of *focal luetic chorio-retinitis* are similar in description to those above, only here the etiology is that of syphilis.

CENTRAL IDIOPATHIC RETINAL DETACHMENTS

These constitute the third large group of lesions found at the macula. Ophthalmologists on the continent designate these cases as 1. *serous central chorio-retinitis*, while at the Wilmer Institute of Ophthalmology Walsh and Sloan refer to the condition as 2. *idiopathic flat detachment of the retina at the macula*. More recently Gifford has described a similar condition as 3. *central angiospastic retinopathy*. The interest here is keen since it is in this group that complete recovery usually returns as to normal vision, fields and fundi.

The typical lesion is that of a clear elevation of the retina off the choroid by a transudate sometimes containing small cholesterol-like, pin-point deposits. In some instances the periphery of the lesion is well demarcated by a sharp white line in the retina. The retina itself shows no abnormalities and the lesion is for some unknown reason confined to the macula. There is usually a relative scotoma for colors, and metamorphopsia, micropsia, and macropsia present. As the lesion heals, the retina flattens, hyperopia decreases and the relative scotoma disappears. Occasionally the lesion persists in a

subacute or chronic stage for many years with partially impaired vision and relative scotomas. The young and middle-aged adults, chiefly men, are affected. A group of investigators in this country and also abroad choose to call this form *juvenile macular exudative retinitis*. Often macular degenerations of this type are mistaken for cases of retrobulbar neuritis because of the difficulty of viewing the pathology at the macula.

DEGENERATIVE GROUP

1. *Juvenile and senile macular disciform degenerations.* The juvenile group has just been referred to as similar to the cases of serous central chorio-retinitis. The senile group consists, as the name implies, of disc-shaped lesions in the macula and the area centralis. They are found usually in old adults, 50 to 70 years of age, and both eyes are involved, though not necessarily at the same time. The vision, because of the large size of the lesion, one to three times the size of the disc, is eventually reduced to 20/200 with the presence of a large absolute scotoma. The remaining fundus examination reveals a normal optic nerve and retina. The retinal and, if visible, the choroidal vessels usually show advanced arteriosclerotic changes. The lesion is characterized by the presence of an irregularly outlined elevated gray mass in the macula with deep obscured hemorrhage, pigmentary changes and occasional white, punctate areas of degeneration in the surrounding retina. The lesion may be confused with choroidal malignant melanoma.

2. *Central retinopathy due to drusen.* In the middle age and later periods of life colloid excrescences on the lamina vitrea membrane of the choroid may occur which are known as "drusen." They are found usually concentrated in the area centralis and at the macula. In some instances the "drusen" reach such a large size that they push the pigment epithelium apart and become visible in the fundus as highly iridescent, crystalline, gold-like particles interspersed with clumps of retinal pigment. Then the vision is reduced to 20/40 or 20/200 with the presence of an associated central scotoma. Form fields remain normal. English authors have recognized a group of such cases in which numerous hyaline bodies and extensive retinal macular degeneration exist on a

hereditary basis, and have called the condition Doyme's guttate choroiditis.

3. *Retinosis circinata* is a condition of degeneration of the retina in which numerous white spots and hemorrhages develop about the macula in the area centralis. The lesion, as its name implies, assumes the shape of a wreath. Inside the white wreath the retina is diseased, and in time the macula undergoes degeneration with pigmentary changes and sometimes a type of disciform degeneration. An absolute scotoma then results with 20/200 the best vision obtainable. The retinal vessels most often present marked arteriosclerosis. The circinate arrangement of the lesions may sometimes be present in case of diabetic retinosis.

4. *Angioid streaks of the retina* is a term used to describe a peculiar distribution of dark colored broad lines in between the retina and choroid about the optic nerve. The angioid streaks have no demonstrable connection with the vascular system. All cases of angioid streaks of the retina are accompanied, ultimately, by extensive lesions in the macula in the sequence of three stages; namely, (1) the angioid streaks are found without any visible lesion in the macula; (2) a rather sudden decrease in visual acuity occurs, which is due to detachment of the retina in the macula area; and (3) the transudate is organized into connective tissue, and a pale grayish macular disc-shaped lesion is formed; occasionally hemorrhage in the fundus is identified. Vision is reduced to 20/200. There has been a recent discovery of their frequent association with a rare skin lesion, pseudoxanthoma elasticum.

5. So often we see *hemorrhage at the macula* in comparison to incidence of other macular lesions. Frequently it is the result of a terminal thrombophlebitis such as occurs with an inflammatory process or the forerunner to types of macular degeneration as a result of degenerative arteriosclerotic changes where the hemorrhage accumulates between the retina and the choroid. In time the hemorrhages usually are absorbed or replaced by glial proliferation or lipoid deposits, leaving defective central vision and fields. Hemorrhage defines a recent lesion.

6. *Cystoid macular retinosis*. It is the forerunner of macular "holes" in cases not subjected to trauma or infection. It is most generally found in the old adults. The yel-

low area at the macula appears to be divided into numerous round polygonal, honeycomb-like spaces whose walls are represented by faint silvery lines. These spaces become enlarged by rupture of their septa and then true cysts are formed. A central scotoma is present and vision is reduced to 20/50 or 20/200. This defect is permanent and the scotoma enlarges with progression of the lesion.

7. *Myopia*. In certain cases of myopia central degenerative changes occur at the macula. The first change is an atrophy of the pigment epithelium in the macular area. Later the whole retinal layer atrophies, leaving a light area surrounded with pigment and crossed by prominent choroidal vessels. In high degrees of myopia the bulging backward of the posterior pole may be seen by a bending of the vessels at its edges—a posterior staphyloma. During the course of progressive myopia hemorrhage may occur in the retina, producing further atrophy and pigment displacement.

8. *Solar retinosis*. Exposure of the eyes to the direct sun rays or to strong carbon arc lights for short intervals produces serious damage to the macula. The refractive media of the eye act as an ordinary convex lens, concentrating the sun rays in its focus and producing a "burning" of the retina. Inadequate protection of the eyes during an eclipse is the most common unrecognized cause of solar burns. Looking at the powerful rays of electric welding arcs may have similar effects; aphakics are prone to macular burns. Visual impairment results. The fundus lesion consists of small black pigment clumps and yellowish-white apigmentary areas or it may appear as a maroon colored area with a gray central patch.

9. *Arteriosclerotic senile macular degeneration* is associated with definite arteriosclerotic retinal vascular findings. The retina at the macula may show small foci of pigment accumulation interspersed by areas of apigmentary degeneration with associated retinal vascular arteriosclerosis. The lesion is found in old adults, producing loss of central vision in part or completely. One form occasionally noted shows large pale patches of apigmentary degeneration throughout the area centralis—probably as a result of diffuse anoxia of this portion of the retina.

10. *Occlusion of the central retinal artery* is most infrequent, and when it occurs it produces edema and coagulation necrosis of the nerve fiber and ganglion-cell layer of the retina, mostly at the macula and in the area centralis. At the fovea the classical cherry-red spot is again seen due to the visible choroid with its viable circulation. Occasionally hemorrhages of small size may be seen about the macula. In the macular region later definite retinal degeneration occurs showing small foci of retinal pigment accumulation and lipoid and cholesterol deposits. The normal transparency of the remaining retina returns.

HEREDITARY CEREBROMACULAR ABIOTROPHIES

These consist of a group of diseases showing familial and hereditary tendencies with concurring retinal macular and cerebral pathology. The cerebral pathology may be absent in many cases. The word abiotrophy has been coined by Gowers and popularized by E. Treacher Collins to signify the degeneration and death of certain cellular elements at a certain stage in the life cycle due to preexisting hereditary factors. In each condition included in this group there is an abiotrophic status present in the rod, cones, or ganglion cells which causes an early death, and these changes make their appearance at a certain period of life.

1. *Amaurotic familial idiocy*. a. *The infantile form* (Tay-Sach's disease). The disease begins in the third to sixth month of life, and death usually occurs from one to two years later. The retinal changes consist in a white ring of intense edema surrounding the fovea centralis which appears cherry-red by contrast. The edema is due to swelling and destruction of the ganglion cells. This pathologic process also involves the brain and the spinal cord, again with degeneration of their ganglion cells. Optic atrophy appears at the disc as the disease progresses and blindness ensues.

b. *Juvenile form* (Vogt-Spielmeyer disease). In this type the symptoms of degeneration do not make their appearance until four to eight years of age, and are much slower in onset. The general symptoms are increasing motor weakness ending in complete paralysis, epileptic seizures and idiocy. Vision fails gradually until the patient is completely blind. Death may come any-

where from the tenth to the twentieth year of life.

The retinal lesion, when first seen, has usually existed long enough for a coarse granular black pigmentation of the macular area to have occurred. Retinal pigmentary changes are present in the periphery exclusively in certain cases, presenting a picture resembling retinitis pigmentosa; while other cases show both the peripheral and macular areas to be affected.

2. *Hereditary cerebromacular degeneration*. In this condition local spontaneous lesions occur in the macula, making their appearance at different periods of life. The fundus picture consists of a moderate degeneration, with edema of the macular region which is soon replaced by the appearance of fine pigment granules and often many shiny lipoid deposits. The macular lesion may be one-half to twice the size of the disc, and, though elevated slightly, in some cases the demarcation from the surrounding retina is most difficult. Vision is usually reduced to 20/200 and large absolute central scotomas are present. The characteristics of these cases are: 1. the involvement of both eyes, which show extremely similar pictures; and 2. the hereditary or familial character of the disease.

DEVELOPMENTAL

1. *Coloboma of the macula* is a somewhat similar defect in the retina and choroid at the macular area to that of coloboma of the choroid. It is round or oval, usually with a sharply defined border surrounded by pigment. Pigment is often seen scattered across the large atrophic defect. Central scotoma is present and vision is reduced to 20/200 or less. Coloboma of the optic nerve, of the iris, and of the eyelid often are concomitant findings.

Circulatory Failure—Circulatory failure in acute infectious diseases is always one of three types: heart failure, peripheral circulatory failure, or a combination of these. Since a normal, healthy heart practically never fails during an acute infectious disease, except in diphtheria and rheumatic fever, the most frequent type of circulatory failure is the peripheral type. However, it is of the greatest importance to determine the type of failure in each case.—Bender, *New Orleans M. & S. J.*, December 1941.

MANAGEMENT OF THE THIRD STAGE OF LABOR*

By

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Hemorrhage, trauma and shock accounted for twenty per cent of the maternal deaths in the United States in 1939; infection forty-two per cent, and toxemias twenty-four per cent. Of the 1,808 deaths from hemorrhage, trauma and shock, 1,617 of them occurred during or after childbirth. From these figures one would think that the majority of these complications occurred during, shortly after, or were apparent in the third stage of labor. Hemorrhage, no doubt, was a contributory cause of death in an indefinite number of those dying from infection. The careful management of this, the shortest of the three stages, is most important for the least possible blood loss and the prophylaxis of puerperal morbidity, since we know that the anemic patient is particularly susceptible to infection. Pastore found that mismanagement of the third stage, partial separation of the placenta, and uterine atony were responsible for seventy-one per cent of hemorrhages in a series of 500 cases.

In recent years the incidence of eclampsia has been reduced as the result of advances in treatment of the mildly toxic patient and the earlier appearance of these cases for prenatal care. Still more recently the advent of chemotherapy has reduced the mortality from infection. Likewise, the question of blood loss, particularly in the third stage, has been the subject of investigation by many in the last few years. These investigations have resulted in less blood loss during and a better understanding of the mechanism of the third stage. With more widespread usage of obstetric analgesia and anesthesia, the proper management of this stage is more important, as will be brought out later.

The third stage of labor is defined as the period elapsing from the birth of the baby to the delivery of the placenta, and is generally considered to have an average duration of fifteen to thirty minutes. The uterus contracts after the delivery of the baby and

becomes thicker; and by a disproportion in the area of decidua and its uterine attachment, brought about by this contraction, the placenta separates. As it descends it pulls with it the membranes.

Recent investigators, viz., Calkins, Pastore, Brandt, and Steer and Sullivan, believe that this separation takes place with the first or second contraction. Calkins brings out a clear-cut criterion for determining the time of separation, and this is one of the most important points in the proper management of the third stage. I have and am sure that most of us, at one time or another, have been too hasty in getting the placenta, not being sure that separation had taken place.

Calkins' method of conduct of the third stage is as follows: "Directly after delivery of the baby the hand is placed on the abdomen and the uterus is held gently with fingers behind and thumb in front with no attempt to massage it unless it becomes relaxed and flaccid. As soon as it changes from a discoid to a globular shape and a trickle of blood appears from the vagina, it is vigorously massaged until firmly contracted and then by squeezing and gentle downward pressure an attempt is made to express the placenta. Should it not come out readily, no further attempt to express or massage is made until some sign of enlargement or flaccidity occurs or there is an increase in bleeding from the vagina."

This time of separation, and attempt to express the placenta only during a contraction, are very important points. It has been wisely said that the period of mismanagement of the third stage is the time elapsing between the separation of and the delivery of the placenta.

Pastore believes that the pushing of the uterus into the pelvis bruises the uterine wall causing passive congestion and more or less tendency to postpartum hemorrhage. He suggests, after separation, holding the fingers of the left hand between the symphysis and the anterior uterine wall and pushing downward on the fundus with the right hand, the left hand preventing the uterus from entering the pelvis. Brandt suggests gentle traction on the cord, after separation, and pushing upward on the fundus with the hand just above the symphysis, thereby preventing inversion.

The placenta should be carefully inspected for absence of cotyledons, signs of succen-

*Read before a meeting of the Southwestern Division of the Association, Selma, October 23, 1941.

turiate lobe or lobes, and membranes. A missing cotyledon of appreciable size should be removed manually, especially in the face of more than average bleeding. Membranes missing will usually take care of themselves. However, if fragments are visible at the os, they may be caught with a hemostat and twisted, gently pulling them out. An abruptly ending broken blood vessel at the margin of the placenta is almost pathognomonic of a succenturiate lobe, and further attempts at expression of these should be made. This failing they should be removed manually.

Calkins' average blood loss was 179 cc. in 800 cases with an average third stage of four minutes. Steer and Sullivan, working at the Sloane Hospital, New York, in 256 cases had an average blood loss of 160 cc. with average third stage of less than six minutes. Ergotrate, 1 cc. (0.2 mg), was given intravenously after the placenta routinely in the cases of Steer and Sullivan. Their method of conducting the third stage was similar to that of Calkins. Pastore's average loss was 244.3 cc. in 500 cases. These figures are much less than Williams' average of 343 cc.; Litzenberg's 462 cc.; Ahlfeld's 500 cc.; and Tarnier's 600 cc.

It naturally follows that prompt recognition of placental separation and the careful expulsion of the placenta before the uterus has time to become filled with blood, regardless of whose method is used, make for less blood loss and less trauma and shock. We are all aware of how shocking it is to a patient to push continuously on her fundus, relaxed or contracted, and disregarding any criteria for separation.

Uterine tone is maintained and the sequence of events, viz., contraction and separation and the necessary contraction for expression, takes place promptly as described above in cases where little or no analgesia and anesthesia are used. With the heavily sedated and anesthetized patient the picture is somewhat different. The anesthesia, particularly ether, leaves the uterus quite relaxed and considerable time might elapse before the necessary contraction occurs. In this type of case the administration of pituitrin or pitocin just as the baby is being delivered will hasten the appearance of the contraction, facilitating separation, and will afford good tone for the immediate postpartum period. It goes without saying that no ergot derivative should be given before

the placenta is delivered lest a tonic contraction and incarceration of the placenta result. Pituitrin at this time produces rhythmic contractions and incarceration seldom occurs. Therefore, ergot derivatives should be reserved until the completion of the third stage. The newer preparations, particularly ergonovine, sold under this trade name as well as the trade name of ergotrate and ergoklonin, are very efficacious and may be given by mouth, intramuscularly, or intravenously with immediate effect. The dosage is 0.2 mg. to 0.4 mg. (gr. 1/320 to gr. 1/160) by mouth; and 0.2 mg. (gr. 1/320) intramuscularly or intravenously. There have been no ill effects noted after intravenous injection of ergonovine. The blood pressure, pulse and urinary output have been found to be unaffected by several investigators, and I have seen no ill effects in the cases in which I have used it. It is very helpful after a long anesthesia or uterine atony from other causes, and the effect is noted in 30 to 60 seconds. I would like to stress that pituitary preparations intravenously are dangerous, and their use by this route is not warranted now that we have the above mentioned preparation.

Hemorrhage in the third stage may be due to cervical lacerations, ruptured uterus, inversion of the uterus, partial separation of the placenta, and lacerations of the vagina or perineum, particularly deep sulcus tears. Any hemorrhage of considerable amount, especially bright red in color, immediately after the baby is delivered and before the placenta has separated demands prompt investigation. With good retraction and light the vaginal canal, the regions of the sulci, and the cervix should be inspected. Repair is best done after completion of the third stage. Cervical lacerations should be sutured, placing the first one just above the angle of the tear to control hemorrhage. In sulcus tears it will probably be necessary to leave the sutures long and use each one to retract for the placing of the next higher suture and so on until the apex is reached. Cervical lacerations may be done in this manner if exposure is difficult. If the cervical laceration extends above the vaginal fornix and into the region of the broad ligament, one should sweep his hand around within the lower uterine segment and, if the tear extends well upward and hemorrhage

is not under control, hysterectomy is necessary. This, fortunately, is not often the case.

Inversion of the uterus is rare but one should ever keep this complication in mind and refrain from pushing on a relaxed uterus and putting excessive traction on the cord. If this occurs it may be quickly replaced, placenta and all if not separated, the uterus packed and oxytoxics administered. In most cases, however, this is not possible before shock and more or less hemorrhage have taken place. In this case it is best to treat the shock and replace blood loss by transfusion, reducing later, perhaps preferably by the operation described several years ago by Irving and Kellogg. Some of these cases are only partial, involving a dimpling, so to speak, of a small portion of the fundus and involute satisfactorily after spontaneous or manual replacement. Others of severe degree may remain inverted and be repaired months later.

What to do with a partially separated or retained placenta is often a difficult question. The amount of bleeding should be the main deciding point. The incidence of sepsis after manual removal is in direct proportion to the antecedent blood loss. It is so easy to wait on a placenta and observe a constant small trickle of blood, which, over a period of several hours, amounts to a great deal. There is no doubt that a partial separation is causing this. Eastman says: "Today, as is well known, manual removal is ordinarily resorted to whenever the third stage, despite the use of such measures as the Crede' maneuver, lasts longer than one hour." Many times the placenta is completely separated and merely incarcerated in the uterus. In most cases the gentle stretching of the cervix with the index and middle fingers will release a portion of it and the balance may be removed with little or no invasion of the uterine cavity.

The repair of the perineum needs no discussion here except for two brief points, viz., to try to complete the third stage before doing this, and to control the bleeding from lacerations or episiotomy by pressure with a large gauze sponge or clamping until repair is begun. One of these wounds will very easily add 100 or 200 cc. to the blood loss unless carefully watched.

Bleeding from the fundus itself during the third stage is almost sufficient evidence to rule out placenta accreta and simple ad-

hesion of the placenta. There is practically no bleeding in these conditions, as there is no placental separation. These two conditions, however, cannot be differentiated except by actual palpation for a line of cleavage. If this is found, simple adhesion exists and the placenta should be gently peeled from its uterine attachment and extracted. If no line of cleavage is found, the rare and much dreaded placenta accreta exists, and no further attempts at extraction should be instituted. To tear away a placenta of this kind piece meal pulls the villi out of the uterine wall itself, which they have invaded in the absence of a decidua basalis. This will expose large sinuses and produce intractable hemorrhage, and may actually tear away a portion of the uterine wall itself giving a complete perforation if the villi have penetrated deeply enough. Deaths in these cases are from hemorrhage or subsequent sepsis. Fortunately this complication occurs only once in every 20,000 to 60,000 deliveries.

Postpartum hemorrhage will be discussed briefly. Bleeding of over 500 cc. is considered a postpartum hemorrhage. A large baby, multiple pregnancy, polyhydramnios, premature separation of the normally implanted placenta, placenta previa, and unusually long or short labors seem to predispose to this complication. These are beyond control of the attendant but if these factors are kept in mind hemorrhage may be anticipated in some of these and met more efficiently. Other predisposing causes which are more or less controllable are anesthesia, operative delivery, preexisting anemia, and mismanagement of the third stage. A rare cause is purpura or some of the other blood dyscrasias, as well as hemolytic jaundice, but they are beyond the scope of this paper and are not true obstetric factors.

Hemorrhage has been noted more in case of blonds and redheads, than in brunettes.

Anesthesia is necessary, but one should be cognizant of the depth and amount used, particularly in the case of ether, and be careful to preserve uterine tone as nearly as possible by the use of pituitrin after the baby, and ergonovine intramuscularly or intravenously after the placenta. Just as important is the holding of the fundus by a nurse for at least one-half hour, and preferably one hour after the anesthesia has stopped. The bladder should be catheterized

after completion of the third stage if not done before delivery, and this occurs very often in the case of multiparas with a quick second stage, giving the attendant insufficient time to do this. The uterus does not contract efficiently when pushed high into the abdomen by a full bladder.

Operative delivery should be resorted to carefully, remembering that two predisposing factors to hemorrhage are being brought into play, namely, anesthesia deeper than usual, and the operative delivery itself.

Anemia should of course be treated antepartum by balanced diet and iron or liver or both. Transfusion is sometimes necessary antepartum.

Treatment of postpartum hemorrhage should begin with ruling out cervical lacerations, deep vaginal tears, and being doubly sure that there are no retained placental fragments or succenturiate lobes. If any of the latter are present they should be promptly removed. One of the ergonovine preparations should then be given intravenously. One cc. each of gynergen and pituitrin may be given intramuscularly also.

The fundus should be held between the right fist in the vagina against the anterior surface of the uterus and the left hand compressing the uterus forward. This constitutes bimanual compression. Cosgrove believes that this is superior to packing and maintains that the latter is unphysiologic. These procedures failing, the uterus should be packed tightly with plain or iodoform gauze, several thicknesses and two to three inches wide. This is best done with the left hand as far in the cervix as possible with someone else exerting counterpressure against the fundus, and the right hand free to introduce the packing by means of uterine dressing forceps. Special types of packers do not seem to be as practical as the above method. This packing should be removed in twenty-four hours and packing ready for reinsertion if excessive bleeding occurs upon removing it. If bleeding through the packing continues in appreciable amount in spite of oxytoxics in proper dosages as time passes by, hysterectomy should be considered. Packing is particularly beneficial after delivery of the placenta in some cases of placenta previa, as the lower uterine segment cannot close off the sinuses as efficiently as the fundus.

Upon the anticipation of or occurrence of any of the above complications the patient should be typed and cross-matched with suitable donors, and blood given as indicated. Infusions of saline or glucose in saline should be given on appearance of the first signs of shock while preparations are being made for blood. Plasma, 250 to 500 cc., if available, is very beneficial in tiding a patient over until whole blood can be given. This may be given without cross-matching or typing, of course. The oldest and most dependable and most universally available triad, viz., morphine, Trendelenberg position and external heat, must not be forgotten while attention is focused on other measures.

SUMMARY

1. Proper management of the third stage of labor is vitally important for the reduction of maternal morbidity and mortality.
2. The recognition of the time of separation of the placenta and its careful expression only during a contraction is the key to successful management of this stage.
3. Pituitrin in the third stage and ergonovine after the third stage play an important role in the preservation of blood, especially in deeply anesthetized patients.
4. Postpartum hemorrhage is less frequent after careful management of the third stage according to any of the methods of various investigators cited.
5. Some common complications of the third stage and postpartum hemorrhage, as well as their management, have been briefly discussed.

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ERROR AND DELAY IN THE DIAGNOSIS OF HYDRONEPHROSIS*

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INTRODUCTION

The subject of hydronephrosis has received so much attention in journals, texts and reports of various urologic symposia that it would seem to be exhausted. However, the consequences of error and delay in making a diagnosis of hydronephrosis should be of general interest, especially to those working in fields other than urology, many of whom are not aware of the protean manifestations of this condition. Justification for further discussion may be found in the fact that while hydronephrosis is a common condition, its diagnosis is too often delayed until reconstructive surgery is impossible. It is our purpose to call attention again to the ease with which hydronephrosis may be mistaken for intra-abdominal disease, and to emphasize the value and need for urologic study, especially in puzzling cases.

Experimental work by many talented observers has reproduced most, if not all, of the lesions found clinically. The work of Hinman,¹ Caulk,² Geraghty,³ Barney⁴ and Quin-

by⁵ must be mentioned as it bears out the earlier clinical observations of Albarran,⁶ Bazy and Fenger,⁷ Israel, Morris and others. Papin, Beer⁸ and Hinman¹ have written extensively on the subject and to them goes the credit for establishing the modern concept of hydronephrosis.

DEFINITION

The term *hydronephrosis* is properly applied to that condition of chronic, aseptic retention of urine in the pelvis and calyces of the kidney which follows any obstruction to the outflow of urine, resulting in loss of tone and dilatation of the portion of the tract above the obstruction.

By definition, therefore, hydronephrosis presupposes obstruction, which may be located at any point in the urinary tract, from the calyx of the kidney to the urethral meatus. The diagnosis, however, is not complete until the type of obstruction, the level of obstruction, and the absence of infection have been definitely established.

The renal changes caused by hydronephrosis are profoundly affected by the presence of infection, and while in theory hydronephrosis is aseptic, one must always think of it as potentially infected, upon which pyonephrosis may acutely descend following an insult by trauma, instrumentation or superimposed infection.

ETIOLOGY

The etiology of hydronephrosis is obstruction, which may be divided into three categories, not always clearly differentiated:

- (1) Congenital
 - (a) anomaly of arterial supply.
 - (b) anomaly of caliber, direction or insertion of the ureter.

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- (c) absence or reduplication of ureter or renal pelvis.
- (2) Acquired
 - (a) movable kidney.
 - (b) traumatism, calculi, infection.
 - (c) external pressure from tumors or inflammation, especially of the genital tract.
- (3) Neuromuscular dysfunction
 - Which causes spasm or paralysis of the urinary tract musculature.

More than one type of obstruction may be present in the same case and a comprehensive diagnosis may be obscure until a complete urologic study has been completed.

PATHOLOGY

The gross pathologic changes in a hydronephrotic kidney are familiar to most physicians; a large kidney, consisting of thinned out cortex surrounding a greatly dilated pelvis. The changes depend on the level and type of obstruction and whether the pelvis is intra- or extrarenal. The histology is the same whatever the type of obstruction.

The work of Johnson⁹ summarizes the picture. He states that "dilatation begins at the glomerulus and proceeds quickly and evenly to the papillary ducts by the end of two or three weeks. At the end of one month there is atrophy of glomerulus and convoluted tubules which straighten and finally disappear. The collecting tubules dilate and become in direct communication with the glomeruli in the medulla, while other glomeruli lose their communication entirely by five months. Atrophy and shrinkage in all dimensions then take place."

Clinically a primary atrophy (without dilatation of pelvis and tubules) is mentioned, supposedly following complete and sudden obstruction. There is no experimental evidence to support such a happening. Hydronephrotic atrophy which follows obstruction, partial or complete, with dilatation of pelvis and tubules (due to the increased pressure against which urine must be secreted) is the common finding experimentally (Hinman¹). This pressure results in an anemic atrophy of the parenchyma and is probably the change taking place in all obstructed kidneys. Secondary atrophy is applied to those changes following infection, degeneration and disuse.

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It is to be emphasized that, while the renal changes due to obstruction anywhere in the urinary tract are the same, the level of the obstruction causes marked differences in effect on the interposed structures. Thus, with urethral obstruction, the first effect is just above the obstruction, and rupture and extravasation may take place. In obstruction at the bladder neck, the bladder, for a time, acts as a buffer and becomes distended and trabeculated from hypertrophy of its muscle bands. Blow-outs of mucous membrane then occur between the separated muscle bands forming cellulules and finally diverticula. This loss of bladder tone is also reflected in the muscle about the ureteral mouths, allowing reflux of urine into the ureters with dilatation of the entire tract, and resultant stasis and infection.

INCIDENCE

The so-called pyelitis of children, which accounts for approximately 5 per cent of all pediatric admissions to the hospital, is the first step in hydronephrosis if neglected. The problem is to determine the reason for the persistence of pyuria and the recurrent attacks of pyelitis, since many clinicians, Lanman and Mahoney,¹⁰ Bugbee and Wollstein,¹¹ and Campbell.¹² report some form of congenital obstruction in at least one-fifth of these cases.

In adults the usual onset of symptoms occurs in early adult life. Cecil,¹³ in 1920, reported that 19 per cent of his series of urinary calculus and 30 per cent of his cases of hydronephrosis had undergone abdominal operations for something else without relief of symptoms.

With newer methods of diagnosis, especially intravenous urography, this percentage is probably less but still occurs with surprising frequency. Most errors occur in acute cases when diagnosis is made with but limited study and on the basis of clinical experience.

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SYMPTOMS

Hydronephrosis may be asymptomatic, or may masquerade as almost any type of abdominal or pelvic disease.

In children a tumor mass may often be palpated which by pressure and progressive renal insufficiency may produce respiratory and cardiac difficulty, constipation, vomiting and general wasting.

In adults a tumor mass is only rarely palpable. These latent cases cause gastro-intestinal symptoms by sympathetic radiation on the basis of the "gastro-entero-renal syndrome of Heitz-Boyer," or may present unexplained chills and fever as the result of superimposed infection.

Urinary symptoms may be absent, and normal urinary findings are not uncommon. Pyuria may mean clinical pyelonephritis, but careful detailed investigation is needed to prevent the changes of secondary pyonephrosis.

The pain may be of two types: either a dull ache caused by pelvic distension, sometimes localized to the loin or costo-vertebral angle, but more often a generalized abdominal discomfort due to complex radiation through the sympathetic system; or an acute, colicky, loin pain, recurrent in nature and typically radiating to groin or genitals caused by obstruction, stone, infection or the passage of blood clots.

Hematuria occurs at some time in approximately 15 per cent of all cases but is generally missed or considered as part of the picture of chronic interstitial nephritis. One is not yet accustomed to associating obstructive phenomena with Bright's disease but many cases at autopsy disclose advanced, bilateral hydronephrosis. Such patients can hope for improvement only through early diagnosis and removal of the obstructive lesion.

Nausea and vomiting are not unusual and in many cases gastro-intestinal symptoms predominate. Urinary symptoms may be absent and inconstant, or normal urinary findings may be encountered since pyuria is a symptom of the later complicated stages. Clinically the condition may be chronic pyelonephritis, and careful, detailed investigation is needed to prevent the changes of secondary hydronephrosis and pyonephrosis.

DIAGNOSIS

In considering the diagnosis of hydronephrosis, one must keep in mind its possi-

bility, remembering that it does not proclaim itself dramatically; and, while it develops insidiously, its symptomatology may be more suggestive of extra-urinary tract disease. The incidence of obstructive uropathy is of sufficient frequency to warrant consideration in every case of ill-defined or puzzling abdominal symptoms, and every case of recurrent or prolonged pyelitis. Modern technical aids have made a complete urologic investigation an exact science, while being at the same time relatively painless and inexpensive, overcoming most of the objections of the past.

In support of this point of view and to demonstrate the consequences of error and delay in the diagnosis of hydronephrosis, the following case reports are presented:

CASE REPORTS

Case 1. Figueras: A 13-year-old boy was admitted to the hospital complaining of inability to control urination, interrupted stream, dysuria, and pain in the left loin and suprapubic area. Urine was cloudy and at times bloody. Four years previously he had been circumcised to control incontinence.

Examination revealed a greatly distended bladder and the presence of spina bifida. His genitals and perineum were badly excoriated from urine.

Treatment consisted of intermittent catheterization to control the urinary retention which was felt to be due to spina bifida. Blood Kahn was negative. Non-protein nitrogen was 32.4 mgm.% and urine revealed albumin, pus and blood in varying amounts.

Intravenous pyelogram revealed normal right urinary tract but left hydro-ureteronephrosis. He was discharged with a urinal bag.

One year later, urethroscopy revealed a large crescentic valve in the posterior urethra and cysto-urethrogram revealed absolute loss of sphincter control at the left ureteral mouth, and the dye filled the entire dilated left tract. The bladder was deformed and trabeculated.

This illustrates delay and error in diagnosis due to incomplete investigation.

Case 2. Backert: A 45-year-old nurse was admitted to the Medical Division complaining of epigastric pain and vomiting, also low back ache and frequency during the day. For at least fifteen years she had been treated for gallbladder disease by medication and diet. Five years previously she underwent an appendectomy and pelvic operation without relief. A gallbladder series was negative but flat plate revealed an enlarged left kidney. She was discharged with the diagnosis of (a) reflex intestinal obstruction and (b) hypertrophy of kidneys, congenital.

Six months later she was readmitted with the same symptoms but because of frequency of urination was cystoscoped. Pyelogram revealed ec-

topic, hydronephrotic kidney. This case also illustrates delay in proper investigation.

Case 3. Russo: A 29-year-old male was admitted with pain in the right lower quadrant radiating to the genitalia. Urine examination revealed albumin and an occasional white blood cell. A flat plate was negative but a pyelogram revealed bilateral ureterocele. Fulguration of orifices and dilatation of ureters relieved his symptoms.

One month later he was readmitted with pain in the right loin, chills, fever and gastrointestinal symptoms. He had pus in his urine and leukocytosis. Although emergency cystoscopy revealed retention of urine in right kidney pelvis, he was subjected to laparotomy and a chronic appendix was removed.

Presented as an error in interpretation of signs and symptoms.

Case 4. Kohler: A 45-year-old female who had suffered urinary frequency and transient hematuria for eighteen months, while her physician reassured her with his favorite pills, was admitted because of pain in the left loin and gross hematuria.

Cystoscopy revealed a bladder tumor involving the left ureteral orifice and necessitating a left nephrectomy which was the seat of advanced pyohydronephrosis.

Presented as evidence of delayed investigation of urinary symptoms.

Case 5. Lorz: A 47-year-old female was admitted to the hospital with pain in the back, swelling of the abdomen, nausea, vomiting, loss of weight, frequency and dysuria.

Urine revealed albumin, casts, blood and pus. Non-protein nitrogen was 72 mgm.%, and urea 43.6 mgm.%.

She was diagnosed as chronic nephritis and treated by low protein, salt-free diet, being discharged five days after admission.

Three years later she was readmitted, acutely ill, with chills and fever, nausea and diarrhea. She had noted a swelling in the right side of the abdomen, which varied in size, for two years. There was leukocytosis, a palpable mass in the right loin, and blood non-protein nitrogen was 70.5 mgm.%. The urine revealed albumin, a few pus cells and a few hyaline casts.

The clinical diagnosis was appendiceal abscess but a flat plate revealed obliteration of the psoas muscle on the right side.

Incision and drainage of perinephritic abscess and hydronephrosis resulted fatally from suppression of urine.

Evidence of delay in proper investigation.

Case 6. Kirsch: A 61-year-old male was admitted to the hospital with a painful mass in the left loin, frequency, dysuria and hematuria. Had lost 40 pounds in weight in the past year. At the age of thirteen he had what was called "childhood fever" and at that time had a mass in the left loin. At the age of twenty-five, following several attacks of hematuria, he was told that he had Bright's disease. At cystoscopy, this admission, blood was noted issuing from the left ureter. A

left nephrotomy was performed which drained three quarts of thin purulent fluid. He died and autopsy disclosed advanced pyonephrosis, stricture at the uretero-pelvic junction and carcinoma in the upper calyx.

Evidence of both error and delay in urologic investigation.

Case 7. Trovato: An 18-year-old female was admitted with a history of recurring attacks of right abdominal pain of 5 years' duration. Each attack lasted two or three days and a diagnosis of acute appendicitis had been made repeatedly.

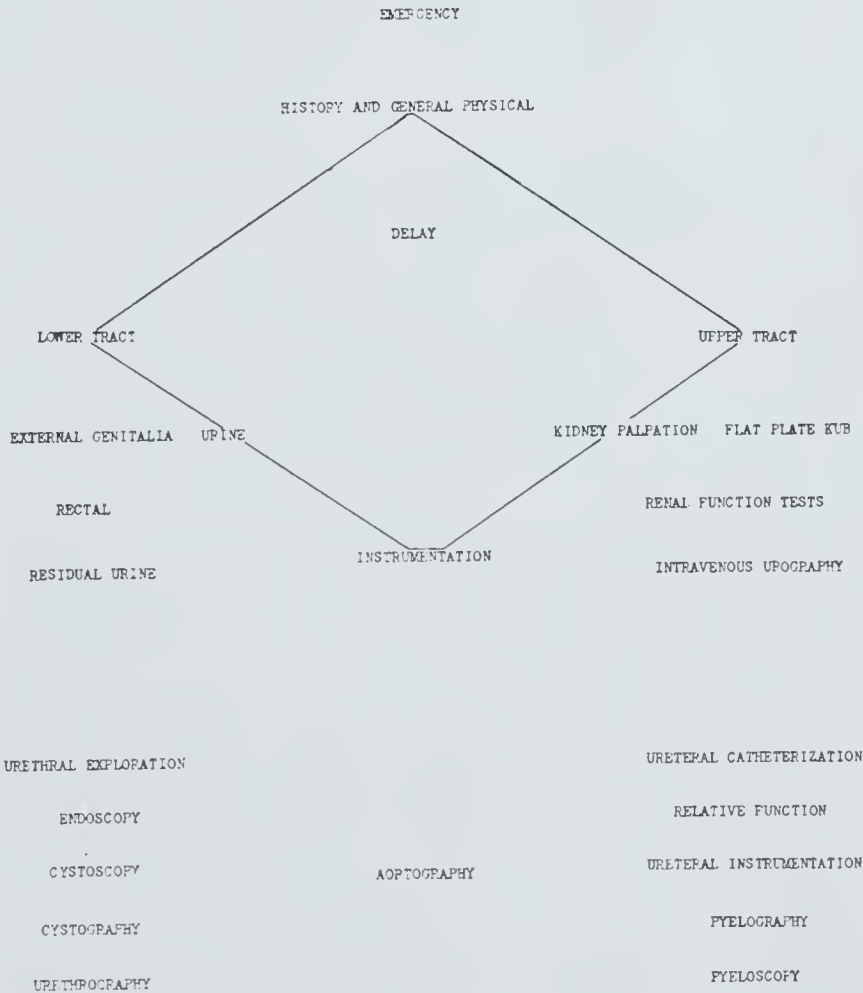
Urine was normal but palpation revealed a large, soft mass in the right flank. At cystoscopy 230 cc. of clear urine were aspirated from the right kidney pelvis. Operation disclosed aberrant vessel over which ureter was kinked, producing hydronephrosis.

Case 8. Ortiz: A 36-year-old female nurse who complained of recurrent attacks of pain in the right flank with prostration, nausea and vomiting for ten years. Appendectomy and pelvic operation performed several years before had afforded no relief. Two years previously, because of indefinite symptoms, a laparotomy for adhesions was performed, following which she was told she had gallbladder trouble. Cystoscopy and pyelograms in different positions revealed an obstructive kink due to a movable kidney.

SUMMARY

The cases which have been presented give the history of the average case of hydronephrosis before proper urologic investigation is carried out. They tend to confirm the thesis which this discussion has sought to present; namely, that hydronephrosis is

DIAGRAM OF COMPLETE UROLOGIC INVESTIGATION



often mistaken for some other disease and that careful urologic examination following the steps in the diagram here presented will often define a perplexing illness in terms of an obstructive uropathy.

Notice on this baseball diamond diagram that some cases due to a presenting emergency may never reach first base, and the start of urologic investigation. However, from that point steps follow in order, the lower tract getting first consideration and all instrumental examination left until last. Aortography has been included for completeness but has never been personally performed. It is certain that a continuous critical attitude on our part will result in earlier investigation and satisfactory conservative reconstructive surgery will become more common than destructive nephrectomy. However, from the number of steps it is clear that a complete examination cannot be carried out at one sitting, therefore, be not impatient with your urologist.

Note: The cases presented are from the Urological Service of St. Vincent's Hospital, New York City—Dr. Herbert Mohan, Director.
Florence Clinic, Florence, Ala.

SPECIAL ARTICLE

A CALL TO THE MEDICAL PROFESSION

The nation is at war. The Congress has passed an amendment to the Selective Service Act which will call for registration of every man up to the age of 65 and which will place all men under 45 years of age subject to service at the order of Selective Service boards.

The Procurement and Assignment Service for Physicians, Dentists and Veterinarians was established by order of the President on October 30. Thus the medical profession itself aids in determining proper distribution of the medical profession in supplying the needs of the armed forces, civilian communities, etc.

At a meeting of the Procurement and Assignment Service held in Chicago at the headquarters of the American Medical Association on December 18, jointly with the Committees on Medical Preparedness of the American Medical Association, the American Dental Association and the American Veterinary Medical Association, plans were drawn for making immediately available to the United States Army and Navy Medical

Corps the names of physicians who wish to be enrolled promptly in the service of the government in this emergency.

On the opposite page is published a blank by which every physician may at once place his name with the Procurement and Assignment Service as one who is ready to serve the nation as the need arises. If you wish to make yourself available for classification, fill out this blank and send it at once to Dr. Sam F. Seeley, Executive Director of the Procurement and Assignment Service. When these blanks are received, they will be classified and checked with the information available in the national roster of physicians at the headquarters of the American Medical Association.

For two thousand and nine counties in the United States, lists have been prepared indicating physicians who are engaged in necessary civilian projects, public health services or educational activities from which they cannot be spared. Shortly the rest of the counties will have such lists available.

The raising of the Selective Service age from 28 to 45 will place a great number of additional physicians in the category of those on whom the nation may call as their services are needed. Estimates indicate that some sixty thousand physicians thus become available for service and that forty-two thousand dentists under the age of 45 also become subject to call. By enrolling with the Procurement and Assignment Service immediately, utilizing the blank on the opposite page, all physicians, but particularly those under 45 years of age, insure to every extent possible assignment to the type of service for which they are best fitted. They avoid thus also the possibility of unclassified service with the United States Army during the period that may be necessary following selection by the Selective Service before the commission can be secured. A physician called by the Selective Service who has not enrolled or who is not on a reserve list obviously serves without a commission during the time that necessarily elapses before a commission is secured. In future issues of THE JOURNAL announcements will be made regularly of the numbers of those who enroll and of the extent to which the immediate needs of the Army, Navy and other government agencies are being supplied.—J. A. M. A., Dec. 27, '41.

ENROLLMENT FORM FOR PROCUREMENT AND ASSIGNMENT SERVICE
FOR PHYSICIANS

Dr. Sam F. Seeley, Executive Officer
Procurement and Assignment Service
New Social Security Building
4th and C Streets S. W.
Washington, D. C.

Dear Doctor Seeley:

Please enroll my name as a physician ready to give service in the Army or Navy of the United States when needed in the current emergency. I will apply to the Corps Area Commander in my area when notified by your office of the desirability of such application.

Signed _____

- 1. Give your name in full, including your full middle name: _____
- 2. The date of your birth: _____
- 3. The place of your birth: _____
- 4. Are you married or single? _____
- 5. Have you any children? _____ If so, how many? _____
- 6. Do you believe yourself to be physically fit and able to meet the physical standards for the Army and Navy Medical Corps? _____
- 7. Have you filled out previously the questionnaire sent to all physicians by the American Medical Association? _____
- 8. When and where were you graduated in medicine? _____
- 9. In what state are you licensed to practice? _____
- 10. Do you now hold any position which might be considered essential to the maintenance of the civilian medical needs of your community? If so, state these appointments: _____
- 11. Have you previously applied for entry into the Army or Navy Medical Service? If so, state when, where and with what result (if rejected, state why): _____

Signature _____
Date _____ Address _____

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THE PRESIDENT'S BIRTHDAY CELEBRATION

The Acting State Health Officer, Dr. B. F. Austin, has been requested by Judge Leon McCord, State Director for Alabama of the annual celebration of the President's birthday, to enlist the cooperation of all the county medical societies in this campaign to raise funds for the support of the nation-wide drive against infantile paralysis.

It is requested that the president of every county medical society get in touch immediately with the members of his society and make plans to participate actively in this important work, thus helping to insure the success of the campaign in his own community.

"The National Foundation has authorized Alabama to use an entirely different method from any that has hitherto been used in raising funds in any state," Judge McCord wrote. "The details of this will be given out at an early date. The thing I am now calling on you to do is to tell the doctors of Alabama that a state-wide campaign is being launched to raise funds for this work and that their help is imperative."

Judge McCord's letter continued:

"You are authorized to say in your letter to the medical societies that no part of the money raised in this campaign will be given

to the Warm Springs Foundation, as it is already amply endowed. Half of the fund raised by each county chapter will be left in the county giving it and half sent to the National Foundation for Infantile Paralysis, Inc., New York. I know there has been some confusion in the past about the division of this money, but we have a definite understanding with the National Foundation on this point and no one need feel concerned about the 50-50 division of the funds raised after the necessary expenses of the campaign are paid."

MINERAL OIL PURGATIVES

"There is perhaps no purgative with which the gastro-enterologist is more familiar than liquid petrolatum. This familiarity results in thoughtlessness in its use. . . ."

"The wide use of liquid petrolatum seems to be based on empirical considerations which make little sense when examined critically. Its chemistry is to say the least uncertain and its pharmacologic action a matter of dispute. Some contend that it acts by mechanically softening the feces; others hold that it undergoes emulsification and still others assert that it speeds up peristalsis by its irritative action on the mucous membrane. . . . However, there are other considerations of a physiologic and pathologic nature which merit attention."

Thus does Morgan¹ open his highly interesting discussion of the subject in a paper read at the 1941 session of the American Medical Association. The author has made a study of the deleterious effects of this type of drug and he is of the opinion that the use of liquid petrolatum as a laxative often interferes with the normal physiologic process of the gastro-intestinal tract. He reminds us that "liquid petrolatum, whether or not it is in complete emulsion, hastens the motility of the bowel contents in the small intestine and, as a consequence, digestion is incomplete."

And he further informs us that "evidence is accumulating that liquid petrolatum may be absorbed, producing pathologic changes in the liver and other abdominal viscera."

"I have been impressed by a group of symptoms, or syndrome, which for lack of a

Morgan, J. W.: The Harmful Effects of Mineral Oil (Liquid Petrolatum) Purgatives, J. A. M. A. 117: 1335 (Oct. 18) 1941.

*Deceased.

better term may be called 'mineral oil poisoning.' Its cause is the continued oral administration of liquid petrolatum, and its treatment is the discontinuance of the oil along with supportive measures to overcome the distressing and oftentimes severe weakness which accompanies this symptom complex. The most frequent symptoms are anorexia, indigestion, flatulence, fatigue, nervousness, dyschesia and anal leakage. Many have suffered weight loss from 10 to 60 pounds. . . In all these cases a complete medical 'work-up' was obtained to exclude organic disease. Most of these patients needed no laxatives at all and most of them showed rapid improvement after discontinuance of the oil."

"It is true that liquid petrolatum is a laxative and it usually induces soft or liquid stools, so that patients with rectal disease frequently take regular large doses several times daily. In my experience, this often serves to aggravate the local lesions (1) by making a fecal reservoir of the rectum and (2) by making complete evacuation impossible."

"I am making a plea and asking physicians to pay more attention to the possible deleterious effects of liquid petrolatum on patients. I feel that physicians have been too willing to get by by telling their patients to take a few doses of liquid petrolatum with the observation that at least it cannot hurt them. Nearly everyone thinks of liquid petrolatum as an intestinal lubricant. The contents of the intestine, except for about the terminal three feet, are liquid and the ability of liquid petrolatum to act as a lubricant for this fluid is more germane to the efforts of Lewis Carroll and his 'Alice in Wonderland' than to serious pharmacology. Controlled observation has shown liquid petrolatum on the average reduces the time of passage of a meal from the pylorus to the cecum by several hours. The reduction in the absorption time factor may help to explain the loss of weight and strength which so often occurs in these patients. It would not be too unfair to say that in some respects liquid petrolatum has earned its niche in the section of toxicology rather than in pharmacology."

"The internal administration of liquid petrolatum, either alone or in combination with other substances, may be attended by decided disadvantages. In view of the light-

heartedness with which it has been prescribed as a laxative, I feel that this discussion is timely."

The average practitioner will probably be surprised at the severity and extent of Morgan's indictment of this drug, but certainly there are many who will agree with him in large part, at least. For about three decades now mineral oil has been most widely used, both alone and in combination with other drugs, and it has long been obvious to thoughtful physicians that it has fallen far short of achieving the miracles originally claimed for it. Even though Morgan may go to an extreme, his discussion is certainly thought provoking.

Medical Preparedness

A CALL TO SERVICE

DR. FRANK H. LAHEY

President of the American Medical Association

The establishment by the government of a Procurement and Assignment Agency properly places the responsibility for obtaining medical personnel in the hands of the medical profession. The success of this agency depends entirely on a few basic features: the complete cooperation of medicine in what even the most doubting must now admit is a truly national emergency; an unqualified willingness to serve the country however, wherever and whenever required; and a firm purpose to establish the fact that medicine intends to maintain its place in the forefront as it always has when a patriotic example is of such significance.

THE NATION AT WAR

(J. A. M. A., December 13, 1941)

On December 7 the Japanese attacked the United States. On December 8 the President declared a state of war between Japan and the United States; both the Congress and the Senate of the United States adopted resolutions supporting the action of the President. The mustering of the forces of the United States to meet this attack and to carry on warfare to absolute victory places an immediate and tremendous responsibility on the medical profession. By the time this editorial appears, the Selective Service will,

no doubt, have intensified its activities to call an additional half million, if not a million, men. For every thousand men called into service, at least six physicians are required.

Fortunately the medical profession has been alert. Since June 1940 the medical profession has been intensively engaged in standardization of military medical procedures, encouragement and promotion of scientific military medical research and enrolment of medical personnel. Already more than twenty-five thousand physicians have given of their services to the Selective Service. Already more than ten thousand physicians are engaged in military medical service. Additional thousands are associated with the United States Army and Navy Medical Corps, the United States Public Health Service, speeded industry and many other military and quasimilitary activities. Moreover, the Office of Civilian Defense has made the medical profession aware of requirements for its services to the civilian population in times of emergency.

Whenever the medical profession has been called on by our government it has responded whole-heartedly and enthusiastically to the Nation's call. Never has there been raised the slightest doubt of the patriotism of the medical profession. Now comes a new opportunity to respond.

The development of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians places on the medical profession the responsibility for supplying the medical personnel necessary to all the services that have been mentioned. The utilization of the roster in the headquarters of the American Medical Association gives opportunity to supply all the needed officers and, at the same time, to protect the requirements of medical education and the care of the civilian population.

On December 18 the Committee on Medical Preparedness of the American Medical Association will meet in Chicago together with similar committees representing the dental and veterinarian professions to outline the details of the method by which physicians will be called. The state and county committees on medical preparedness will be utilized in developing complete information regarding physicians available for various types of service. Shortly also The Journal will publish a blank on which every phy-

sician willing to serve may indicate the special service for which he is immediately available.

The organization has been made ready; the lines of communication are drawn; confusion need not prevail. When the call comes, physicians who are to serve with the military branches will enroll directly through the corps area commander in each corps area and all of the necessary steps will have been taken to facilitate such enrolment. The President of the United States will find the physicians of this nation ready and willing to meet any demands which the nation may place on them.

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

AN ADDRESS

DELIVERED IN BIRMINGHAM, DECEMBER 12, 1941

BY

**SAM F. SEELEY, M. D., EXECUTIVE OFFICER
PROCUREMENT AND ASSIGNMENT SERVICE
OFFICE OF DEFENSE HEALTH AND WELFARE
SERVICES**

WASHINGTON, D. C.

Before entering upon a discussion of the functions of the new Procurement and Assignment Service of the Office of Defense Health and Welfare Services recently organized in Washington, D. C., I wish to convey to you the appreciation of the Directing Board of the Procurement and Assignment Service for your splendid and wholehearted cooperation in arranging this meeting on such a short notice. Doctor Frank Lahey of Boston, Chairman of the Directing Board of the Procurement and Assignment Service, has requested that I appear before you in order that I may explain to you the mission of the Procurement and Assignment Service.

I am certain that it will be a great source of satisfaction to you to know that the medical profession of this country anticipated many months ago the necessity of formulating a program which would ensure the best professional care of the armed forces, the industrial and civil agencies of our country. Under the direction of the President, the Office for Emergency Management has set up three distinct agencies charged with mobilization of our national resources in order that the best possible medical care may be given to every member of our country.

These three agencies are as follows: (1) the Health and Medical Committee of the Office of Defense Health and Welfare Services, which functions in an advisory capacity; (2) the Office of Scientific Research and Development, which is conducting a broad program of medical research under the auspices of Doctor Richards of Pennsylvania, Chairman of the Committee on Medical Research; and (3) the Procurement and Assignment Service of which I will speak later.

The Health and Medical Committee is composed of a main committee, consisting of Doctor Abell of Louisville, Kentucky, the Surgeons General of the U. S. Army, U. S. Navy, the U. S. Public Health Service, and Doctor Richards. Subcommittees under the Health and Medical Committee assist in formulating national policies in reference to Medical Education, Hospitalization, Industrial Health and Medicine, Nursing, Negro Health, and Dentistry.

All matters pertaining to medical research are carried out by the Medical Division of the National Research Council of the National Academy of Sciences. Doctor Wood, who is Chairman of the Medical Division of the National Research Council, has organized ten major committees with the necessary subcommittees, which are engaged in carrying out every conceivable angle of medical research which will contribute to the national emergency program. More than two hundred of the most noted scientists of this country are engaged in carrying out research problems under the auspices of the National Research Council. Liaison officers from the Army and Navy carry problems from the Professional Service Division of those Services to the various committees of the National Research Council. These committees transmit to the Surgeons General resumes of the best known methods of treatment of all diseases and injuries. Research problems are drawn up and allocated to laboratories throughout the entire country. The National Research Council committees assist in drawing up of memoranda which are transmitted to the medical officers of the Army and the Navy and which may be used as a basis for treatment along the most modern lines.

As early as June 1940, the Surgeon General of the United States Army requested that the American Medical Association assist in the procurement of the necessary per-

sonnel for an Army of one and one-half million men. The American Medical Association started immediately in the drawing up of rosters of all of the physicians of the United States. Shortly after this, the American Dental Association also drew up rosters of the dental profession. At the present time the American Veterinary Medical Association is engaged in drawing up rosters of all of the practicing veterinarians of the country. These rosters have served to assist the Surgeon General of the Army in obtaining medical department personnel to carry out the duties incident to the maintenance of an Army of 1,700,000 men.

In April 1941, the Subcommittee on Medical Education of the Health and Medical Committee passed a resolution to the main committee recommending that a central agency be set up for the purpose of procuring and assigning medical, dental and veterinary personnel to the armed services with a view of maintaining adequate professional care for the industrial population and the civilian population of this country. This resolution was accepted by the Health and Medical Committee, and at the meeting of the American Medical Association in Cleveland in June 1941 this resolution was endorsed and passed back to the Health and Medical Committee. This Committee met on October 22 to initiate the development of a Procurement and Assignment Service. At that meeting the members of the Health and Medical Committee sought the consultation and advice of the leading medical and dental people of the United States. Liaison officers from practically every government agency, including Selective Service and the Office of Civilian Defense, aided in drawing up this program. At this meeting a commission was appointed by the Health and Medical Committee which was requested to draft a program for a Procurement and Assignment Service. At this point developments moved rapidly forward. The Commission met on October 28th and recommended the setting up of the Procurement and Assignment Service. Their recommendations were forwarded to the President by the Director of the Office of Defense Health and Welfare Services, and were approved by the President on October 30th. The President has named the following members to serve on the Directing Board: Dr. Frank H. Lahey of Boston, Chairman; Dr. C. Willard Camalier,

Washington, D. C.; Dr. Harold S. Diehl, Minneapolis, Minnesota; Dr. James E. Paullin, Atlanta, Georgia; and Dr. Harvey B. Stone, Baltimore, Maryland. Dr. Sam F. Seeley, at that time on duty in the Office of the Surgeon General, was named as Executive Officer to the Directing Board and by direction of the President, has been transferred from the War Department to serve as Executive Officer in a full-time capacity. Committees were formed immediately on Dentistry, Hospitals, Industrial Health, Information, Medical Education, Negro Health, Public Health, Veterinary Medicine, and Women Physicians. Liaison officers have been assigned by the Army, Navy, U. S. Public Health Service, Veterans Administration, Selective Service System, U. S. Civil Service Commission, Office of Civilian Defense, and the Division of Health Services, Children's Bureau, Washington, D. C.

The primary objective of the Procurement and Assignment Service is to maintain a complete list of all physicians, dentists, and veterinarians of the entire country with detailed information as to age, physical condition, professional qualifications, and availability for service in the various military, civil and industrial agencies of the country. This information has been tabulated on the punch card system. All agencies of the government which utilize the services of physicians, dentists and veterinarians will make requisition upon the Procurement and Assignment Service for personnel. These requisitions will state the age, professional qualifications, and the physical condition of those professional people whose services are desired by these agencies. Lists will be prepared from the rosters and forwarded to the requisitioning agency. These agencies will then enlist the services of these professional people. At the same time, the Procurement and Assignment Service will notify the people whose names have been tendered to the requisitioning agency that they have been chosen to enter upon their new duties.

Through the various committees serving the Procurement and Assignment Service, surveys are rapidly being made of all of the facilities of the United States. For example, every hospital will be canvassed and they will be asked to state the minimum number of professional people required to maintain adequate care of the sick of these institutions. In the same manner, the needs of

school faculties, industrial organizations, national, state and county health organizations, and other agencies, both military and civil, will be surveyed.

The organization of the Procurement and Assignment Service is practically complete. The central office in Washington, D. C. has been set up, and a regional office is being set up in Chicago, which will maintain the rosters of the American Medical, Dental, and Veterinary Medical Associations. Committees are being named in each of the nine corps areas, which will serve in an advisory capacity to the corps area commander. Incidentally, these geographical corps areas of the Army coincide exactly with the defense areas set up by the Office of Civilian Defense. The committees serving in each corps area will consist of a representative of medical education, a representative of hospitals, a representative of the national preparedness committee, and at least two well-known civilian practitioners of that territory who are acquainted with the professional people and with the needs of those areas. At present the committees are being set up within the corps areas in each of the states and these state committees will be asked in the very near future to develop committees within their districts and counties in order that the many functions of the Procurement and Assignment Service may be carried down to the last county of the country. I am now en route to Chicago where, on December 18th, the Directing Board will meet with the members of the Committees on Preparedness of the American Medical, Dental, and the Veterinary Medical Associations, at which time a program will be drawn up and shortly thereafter the states will be asked to complete the organization within their area.

The functions of this Service are broadly two in character, procurement and assignment. In order to maintain the existing rosters and to determine the professional qualifications of professional personnel, also to determine the needs of the medical training institutions, hospitals, the health departments, industrial organizations and civil communities, the committees of each county will forward to the central office through their state committees information which will serve to ensure proper distribution of professional personnel in every capacity. These committees will be asked to serve in the conduct of surveys by the various com-

mittees of the Procurement and Assignment Service. To date, more than 1,900 of the more than 3,000 counties of the United States have been completely surveyed and reports are now on file in the office upon which the needs of the community and the availability of personnel of those communities may be judged.

Assignment of professional personnel will be based upon the information gained through these various communities. As far back as July of 1940 more than fifty per cent of the first one hundred and fifty thousand physicians who answered questionnaires volunteered for military service in case of war. Under the present circumstances and in view of recent military developments, it is anticipated that the majority of all physicians, dentists and veterinarians are now ready to volunteer for active military service in any capacity which may be best suited to the national defense program. It is hoped that the functions of the Procurement and Assignment Service may be facilitated by the early volunteering of the professional people throughout this country. It is our hope that so many will volunteer to serve in any capacity which the Service may predetermine that we will be able to satisfy at an early date the needs of the military service and may turn our attention to an equally important function, that of avoiding disproportionate dislocation of professional people from communities where their services are needed. In this way, the Procurement and Assignment Service expects to minimize the dislocation of professional people from key positions in the civil and industrial communities.

Let us turn for a moment to the assets in terms of professional people of our country today. At the present time, any man under the age of twenty-eight, if physically able, is required to enter the military service. Approximately sixty per cent of those graduating after twelve months of internship are under the age of twenty-eight. The majority of these men are physically fit and must enter upon military service. The Selective Service System has deferred these men for a time sufficient to guarantee graduation from medical school and the completion of twelve months of internship. These students have been asked that during the last two years of medical school training they join the Medical Administrative Corps Re-

serve or a reserve corps in the Navy of a like nature. After graduation from college, they are asked to join the Medical Corps Reserve of the Army or the Navy in order that they may be sent to active duty immediately upon completion of the twelve months of internship. It becomes apparent that, if a medical student has not identified himself with the Army or the Navy after the completion of twelve months of internship, and he is under the age of twenty-eight, he may be drafted as a private. For this reason, it is necessary that all men engaged in medical education must seek a reserve commission in the Army of the United States or in the Reserve Corps of the Navy in order that their induction into the military service will result in the utilization of their medical training. During the World War of 1917, the draft age was higher than twenty-eight. At the present time, we are unable to state whether the draft age will be raised and we are unable to surmise what age will be set if the draft age is raised. For this reason, the Directing Board of the Procurement and Assignment Service recommends that every doctor who is physically able to identify himself as willing to enter the military service in case he is needed. It is anticipated that within the next sixty days every physician, dentist, and veterinarian of this country will be canvassed and will be asked to return a questionnaire to the central office of the Procurement and Assignment Service. At that time an estimate will have been made of the number of professional people required by each of the government agencies, the civil and industrial agencies, and the civil communities. It is anticipated that the names of professional people will be set aside so that they may be forwarded as the needs of the military service expand. Each recipient of a questionnaire will be asked to state his first, second, third and possibly more choices as to what type of service he would prefer to render. Upon analysis of these questionnaires, it is hoped that a sufficient number will have volunteered to serve in the armed forces, in the industrial plants, and in other agencies which would require dislocation from their present locality, so that a minimal disruption of the present conditions will result.

In closing, I wish to impress upon you the necessity of all of those physically fit volunteering to serve in the military services.

It is obvious that there are not enough physicians, dentists and veterinarians in the age group under 28 to satisfy the military needs. Let us hope that voluntary enlistment will be sufficient that the draft age will not have to be raised and above all let us hope that

it will not become necessary to consider legislation which would make it mandatory that professional people who are physically fit be forced into the military service against their will.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THE FARM SECURITY ADMINISTRATION AND MEDICAL SERVICE IN ALABAMA

By

Merle E. Smith, M. D.,
Parrish, Alabama

At the nineteen thirty-eight meeting of the Association there were presented resolutions from the Coffee County Medical Society and the Wilcox County Medical Society showing that the Coffee County Medical Society had made an agreement in January 1938 to furnish medical services to the clients of the Farm Security Administration in that county. Both societies, recognizing that the ordinances of the Association then in force held such a contract to be unethical, but at the same time realizing that some attempt should be made to solve the problem of medical and surgical care for these people, prayed that the ordinances be changed to allow a contract to be made and put into force. The Coffee County group, on the basis of three-months' trial, stated that their plan "is satisfactory and workable." Being cognizant of the needs of the rural people and being in sympathy with any attempt to work out a satisfactory method of spreading medical care and costs that would not conflict with the tenets of the American Medical Association, the State Medical Association amended the ordinances to allow contracts to be made with governmental agencies, approved by the County Medical Society and the Association's Board of Censors.¹

The following year Dr. Paul Jones gave a resume of the work as it was being done in Wilcox County, showing there was a steadily decreasing net income to the physician having a FSA contract, and that in one instance, Gees Bend, the practice was entirely a list

practice being divided between two doctors.² At that time the Wilcox County Medical Society adopted a resolution (Nov. 16, 1938) setting forth the method of handling the pooled funds and limiting to some extent the services to be rendered and the medicines to be furnished.

At the 1940 meeting of the Association in Mobile, it was noted in the reports of Vice-Presidents Jones and Smith that the FSA work was becoming even more unsatisfactory to the physicians. And Dr. Paul Jones stated: "This has been done at considerable sacrifice on the part of the physicians and the hospital."³

Mr. E. S. Morgan, FSA Regional Director, stated that each FSA family pays \$12.00 for the wife and husband and \$1.00 for each additional member of the family up to six, or a maximum of \$18.00 per year per family. He went on to say: "Our reports for the past three years have shown that the members of these associations, though coming from the bottom third of farmers financially, are paying as great or a greater per cent of their medical bills than the general average for the country."

Further: "These associations are making it possible for many of these families to get and to pay for regular physicians' care for the first time in their lives."⁴

In making a report on group medical programs in Alabama during 1940, the FSA submitted that thirty-five counties participated in the plan, which covered 12,586 families and 69,223 individuals. Basing their experience on twenty-one of these thirty-five counties the following experience was claimed:

2. Wilcox County and Gees Bend Plan of Medical Care, J. M. A. Alabama 8: 430-435 (June) '39.
3. Trans. M. A. Alabama, 1941, 4-5.
4. The Birmingham News, July 4, 1941, p. 18.

1. Trans. M. A. Alabama, 1938, 24-27.

Amount Used.....	0	Up to \$5.00	\$5.00 to \$16.00	\$16.00 to \$30.00	\$30.00 to \$75.00	Over \$75.00	Total
No. Families.....	907	1,004	2,511	1,458	1,356	298	7,545
Per Cent	12	13.3	33.2	19.3	18.0	4.1	100

The comment was then made that, while the average family is paying \$16.00 into the fund, 25 per cent of the members used less than \$5.00 worth of services.⁵

Recently some of the hospitals are refusing FSA clients and the Southeastern Division of the Association voted not to renew the contracts another year.⁶

In attempting to evaluate the opinion of the medical profession in the state in regard to these contracts, each medical society in the state was sent a questionnaire during the last part of October 1939, asking whether the FSA plan was being used in that county, how many members were in the society, and how many were using the plan, how the funds were divided, whether they were satisfied, whether the plan would be tried next year, did they have any special rules and what per cent of the fees were collected, as well as how long they had tried the plan. The compilation appears herein as Table A.

In the remarks many of the secretaries gave the reaction of the society to the set-up. These are listed below (Table B), as well as some of the special rules and limitations that were in force.

From the tables it can be seen that if 80 per cent of the fund was marked for medical care, and if the doctor furnished his medicine, he collected about 51 per cent of the fee charged.

DISCUSSION

From conversations in the field, we find that only one of the plans of medical care has been stressed by the FSA; that is, the pooling of the funds with a cooperative type of medicine. The other plan, in which the FSA borrower takes his bill to the County Administrator and is issued a check for the amount of the bill, which he carries to the physician, is seldom mentioned. Necessarily the check must not be more than the sum allotted for medical care in his loan. Of

course the first method is less troublesome to the FSA.

This plan of cooperative purchase of medical care must be approached from several angles. That it is not in its present form satisfactory to the majority of the medical profession is inescapable. That it is accepted in lieu of something better would appear certain from the conversations that we have had with various physicians and from the replies received. That it works best in communities in which there is little medical competition is also apparent.

The physician has always had two ideas in entering upon the medical profession: to serve the community and to gain a fair living for himself and his family. Up to recent times it has not been necessary to furnish a great deal of equipment and expensive medicines to practice medicine, but with the advances that have been made in the cost of a medical education, the cost of equipping an office and the cost of carrying on the practice of medicine have become so great that the doctor cannot stay in communities that will not support him nor will he stay in the community that will not support the facilities that are necessary in the practice of medicine.

In contrasting the FSA plan with other contracts in the state we find that the average coal miner pays \$18.00 per family for medical care, and the simple medicines. In addition, he pays at least \$1.00 per month for hospitalization, and venereal diseases and obstetrics are paid for as extras. He also must pay extra for his dental care. Moreover, the mine physician is usually furnished a house, an office, and coal and lights by the company. Thus the FSA client, widely scattered in territory, is paying less than half the amount that the miner living in a close community pays, and the cost of taking care of him is greater.

For the FSA client the plan is ideal where the pooling of the money is done. He has only to ask for the attention and it is his.

5. Trans. M. A. Alabama, 1941, 22-24.
6. Personal communication to the author.

TABLE A

County	Years of Participation	Members	Members Participating	Administration	Dental	Surg.	Drugs	Med	Satisfied	Renew	Special Rules	Per Cent Collections
1.	1	4	4	3%	-	10%	87%	-	part	yes	-	92
2.	2	22	15	2%	-	15%	83%	-	no	? will try	2	65
3.	no	8	-	-	-	-	-	-	-	-	-	-
4.	no	-	-	-	-	-	-	-	-	-	-	-
5.	1939 - 3	-	-	-	-	-	-	-	-	-	-	-
6.	no	11	-	-	-	-	-	-	-	probably	4	-
7.	2	15	15	0	0	5%	25%	70%	no	no	5	50
8.	2	12	12	4%	0	-	15%	81%	yes	yes	-	75
9.	1	12	12	3%	-	17%	80%	-	no	? no	-	30
10.	no	-	-	-	-	-	-	-	-	-	-	-
11.	1939	-	-	-	-	-	-	-	no	no	-	-
12.	2	10	5	2%	5%	5%	-	88%	no	no	6	45
13.	2/3 rds	16	13	2%	0	18%	20%	60%	no	no	7	45
14.	2	14	13	-	-	-	17%	87%	fair	probably	8	70
15.	1/2	11	11	3%	-	-	15%	82%	no	no	-	30
16.	no	-	-	-	-	-	-	-	-	-	-	-
17.	no	-	-	-	-	-	-	-	-	-	-	-
18.	no	-	-	-	-	-	-	-	-	-	-	-
19.	1	10	10	3%	0	12%	-	85%	no	? no	9	50
20.	2	27	14	0	0	20%	-	80%	yes	yes	10	49
21.	1	14	14	3%	-	17%	-	80%	part	probably	11	60
22.	no	-	-	0	0	-	6%	84%	-	-	-	-
23.	2 1/6	12	12	-	0	17%	80%	-	no	-	12	35
24.	1	10	10	3%	0	-	-	-	no	-	13	50
25.	no	-	-	-	-	-	-	-	-	-	-	-
26.	1 1/2	-	-	-	-	-	-	-	-	-	-	-
27.	no	-	-	-	-	-	-	-	-	-	-	-
28.	no	15	15	3%	-	-	-	-	no	no	14	25
29.	1	8	8	-	-	-	-	-	-	yes	15	-
30.	no	-	-	-	-	-	-	-	-	-	-	43
31.	no	-	-	-	-	-	-	-	-	-	-	-
32.	1 5/6	38	22	3%	0	17%	-	80%	part	yes	16	67
33.	2	14	14	0	-	33 1/3%	-	66 2/3%	part	yes	-	50
34.	no	-	-	-	-	-	-	-	-	-	-	-
35.	no	-	-	-	-	-	-	-	-	-	-	-
36.	2	16	13	1%	-	7%	20%	72%	no	no	-	65
37.	1	35	35	10%	-	15%	-	75%	yes	yes	-	60
38.	1	10	5	-	-	15%	-	85%	no	yes	17	55
39.	no	-	-	-	-	-	-	-	-	probably	-	-
40.	1	23	11	-	-	charity	-	-	-	yes	-	90
41.	no	10	-	-	-	-	-	-	-	-	-	-
42.	no	4	-	-	-	-	-	-	-	-	-	-
43.	1	18	10	2%	0	15%	12%	82%	part	yes	18	60
44.	2	16	16	3%	-	15%	-	82%	part	yes	-	35
45.	2	9	7	3%	-	20%	-	77%	no	yes	-	40
46.	1939	8	8	0	-	20%	-	80%	no	nc	-	40
47.	3	8	8	-	-	17%	-	83%	yes	yes	19	-
48.	1	-	-	-	-	-	-	-	no	no	-	-
49.	3	13	13	3%	0	10%	60%	27%	yes	yes	-	42
50.	1	16	9	\$15 mo.	0	15%	-	-	no	no	-	25
51.	2	21	15	\$10 mo.	some	5%	30%	65%	yes	yes	-	40
52.	no	-	-	-	-	-	-	-	-	no	-	-

See Table B for references 1, 2, 3, etc.

Many of the clients have gone to as many as three doctors on the same day. To offset this a very cooperative administrator must be at the head of the agency in each county. For these clients some of the counties have made separate fee schedules, usually twenty to fifty per cent below the ordinary fees charged. Since in most counties the average of people financially is about the same, this separate price list gives an incorrect ratio of collections. The converse of this is also true: if the physician does not furnish the services set forth in the statement, he should not charge for them as this also gives an incorrect percentage of collections.

Most doctors have found that as the plan gets into its second and third years there is an increased demand for services and that in a large number of instances these are not justified. Then too the patients seem to feel that any type of medicine they desire should be furnished whether found in the pharmacopeia or patent.

It was suggested by the State Board of Censors that each vice-president of the Association secure from the medical societies in his division statistics relative to FSA practice for submission to the 1942 annual session. It is hoped that each society will do its utmost to have the correct figures so that some definite plan of action may be outlined.

CONCLUSIONS

1. The present FSA plan of medical care is unsatisfactory to the majority of the medical practitioners in Alabama.
2. At present, with the low fee, there should be some limit to the amount of medical care that is to be furnished each family.
3. There should be no special fee schedule for FSA clients.
4. Contrary to the figures released by the FSA the physicians are doing the practice for about fifty per cent of the reduced fees and this means that FSA work is being done at cost or below cost to the physician.
5. No contracts should be made in 1942 for longer than six months.

TABLE B

Where the percentage is expressed between two columns it is for both items.

1. Special rules eliminating the treatment of venereal diseases and chronic conditions will be in force next year. We do not like this plan and one man can ruin it if he desires but will continue it another year.

2. This is considered an emergency set-up. No surgery is done except to save life. No chronic disease is treated medically and the total services are limited to three times the amount of the client's FSA loan.

3. Unsatisfactory, total cheat, FSA representatives will chisel the contract.

4. In a general way the members do not like the contract but will continue it for another year, maybe.

5. The contract will have to be modified in 1941. No bill for surgical cases above \$50.00.

The plan as we see it is being used by people that should not be eligible. The abuses overshadow the good features.

6. Will not participate under the same plan. Think the state should adopt one for all.

7. The available fund is too small to render the plan effective.

8. Special drugs are paid for in full. We pay each doctor \$40.00 per month if possible; or, if not, then by percentage.

9. Regular fees, \$3.00 plus 50 cents mileage. Obstetrics, \$25.00 plus 50 cents mileage. No chronic and venereal diseases treated. Benefits limited to four times the amount put in, except surgery which is limited to \$150.00 per family, \$100.00 per person. No biologics. All medicines on prescription, no refills. Thinks amount of money per family should be increased.

10. Surgery limited to emergency only. We find this class of patients (tenant farmers) pays more under this plan than when dealt with individually.

11. Among rules are limitation of \$50.00 to any one individual from emergency fund. Allows patients to use private rooms if they pay the difference. Fee schedule from emergency fund: midwife \$3.00; minor surgery \$3.00; fractures \$5-\$10; compound fractures, \$10-\$20; fracture spine, hip, head, \$20-\$35; version and extraction \$15; induction labor \$10; acute retention \$5-\$10; emergency obstetrics \$15; acute appendicitis, ruptured gastric ulcer, ruptured ectopic pregnancy, intestinal obstruction, strangulated hernia, acute osteomyelitis, cesarean section and mastoidectomy \$50. All cases must have permission from the medical committee except in emergency. Surgery outside of the hospital \$15. Extractions for acute pain or abscess \$1. Does not treat chronic cases and the physician is to be the judge. Routine obstetrics is not included.

12. This year allowed \$25 for a major operation, and \$2 per day for hospital. Clients and doctors both abused the system.

13. Wants plan changed before participating again.

14. Obstetric fees to be on a guaranteed basis. Complete plan not yet available.

15. Since we declined to renew the agreement the individuals have arranged to pay their bills out of the money set aside from their loans. They have been more careful about coming and more reasonable in their demands for service. This plan caused us a lot of headaches.

17. Will omit obstetrics and venereal diseases. In case of surgery patients are sent in as straight charity.

18. All fees were reduced 20-60%.

19. It is a class of practice which I do and have done for many years and never gotten anything for; and now I get a little for what I do for them, which is just money found.

20. Has caused considerable arguments in the society, but to date there are no casualties.

Committee Contributions

Prevention of Cancer

CANCER OF THE UTERUS

Cancer of the uterus constitutes about one-fourth of all malignant tumors in the female. Cancer of the uterus may occur in the fundus or in the cervix. About 10 to 15 per cent of the uterine cancers are of the fundus and the other 85 to 90 per cent are of the cervix. Since treatment and prognosis differ significantly in the two locations they will be discussed separately, cancer of the cervix now and that of the fundus in an early issue of the Journal.

Cancer of the cervix is a form of cancer that, in its early stages, when it is limited to the cervix, is accessible for treatment. If the cancer is properly treated at that time it can be expected that 80 per cent or more of the cases will be living five years after diagnosis and treatment.

The cardinal sign and symptom of uterine cancer is abnormal vaginal bleeding. Any patient who has bleeding not associated with the menstrual periods before the menopause or vaginal bleeding after the menopause should be suspected of cancer until it can be proved otherwise.

Any friable tumor or granular or eroded lesion of the cervix no matter how superficial, which bleeds easily on examination, should be subjected to biopsy and regarded as cancer until proved otherwise by a microscopic examination of the biopsy tissue. The Schiller test and other diagnostic adjuncts may occasionally add to the nicety of clinical diagnosis, but they in themselves cannot make the diagnosis and cannot replace biopsy as the essential procedure to diagnose cancer. Tissue may be obtained without anesthetic by means of a scalpel, scissors, or antrum punch; a small sharp curette may be used to explore the cervical canal.

The treatment of carcinoma of the cervix is done almost entirely by radiation, both with radium and x-ray. Total hysterectomy is grossly insufficient and when used with x-ray and radium the results are no better if not worse than with the radiation treatment alone. The Wertheim operation has a high operative mortality, adds very little to the statistical cures, and is now seldom used. The best results are obtained when the course of treatments, with the amounts and the application of radium and x-ray, is determined by a radiologist in consultation with the clinician, who can give the location and extent of the lesion, and with the pathologist, who can give the degree of malignancy and the probable response of the carcinoma to radiation therapy.

The importance of teaching women to see their doctor at the first sign of abnormal bleeding cannot be stressed too much. Likewise, the doctor, when he is consulted, should not delay obtaining a definite diagnosis and instituting treatment. It has been shown that for each month's delay after the first abnormal bleeding there is a corresponding 10 per cent decrease in the chance for cure.

Five-year arrests following adequate radiation therapy can be expected about as follows:

1. When the carcinoma is limited strictly to the cervix—80%.
2. With early infiltration into the parametria and body of the uterus—40%.
3. With advanced infiltration into the parametria and body of the uterus—12%.
4. With infiltration of the bladder or rectum, or with distant metastases—1%.

Maternal and Infant Welfare

MORTALITY RATE IN MULTIPLE PREGNANCIES

There exists in the mind of many doctors a belief that a woman who has had a considerable number of pregnancies will have little difficulty at the time of her confinement. A primipara is often watched with considerable concern, whereas a multipara, pregnant for the tenth time, is too often given little attention because it is felt that she is unlikely to develop any trouble. With this in mind, it is of interest to review a paper read by Dr. N. J. Eastman, Obstetrician in Chief of the Johns Hopkins Hospital, at the

annual meeting of the New York State Medical Society on May 9, 1940.

Dr. Eastman applied the French term *grande multipara* to the woman who has had five or more children. His studies were based on a series of 45,514 consecutive obstetrical cases and the maternal deaths in the series were then classified according to the parity of the woman at the time of her last pregnancy. Expressing maternal mortality in deaths per 1,000, it was found that among women in the para I to VII groups the death rates ranged between 3.35 and 3.78. Among the para VIII women, the mortality rate rose to 6.08 (note that this is con-

siderably higher than in primiparas), while among women with a parity of IX or more, the death rate increased strikingly, rising to 11.73. This rise, it is to be noted, is abrupt and increases rapidly after parity VIII or IX is reached.

Two conclusions from these facts seem inescapable: first, that the doctor must regard the *grande multipara* as a difficult case rather than an easy one—far more likely to present difficulties than the primipara; and second, from a medical and social viewpoint alone, it would be advisable for women to restrict their families to five or six and certainly to less than eight children.

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

B. F. Austin, M. D.

Acting State Health Officer in Charge

THE REASONS UNDERLYING THE CREATION OF THE EAST ALABAMA HEALTH DISTRICT*

By

A. H. Graham, M. D., Director
Opelika, Alabama

Since its humble beginning the Alabama State Department of Health has been guided through a series of developments until it reached its mature status of one hundred per cent growth as of January 1, 1938.

The guiding hands of our more recent State Health Officers, Dr. Samuel Wallace Welch and Dr. James Norment Baker, have indicated the direction in which growth should be encouraged. Each stage in development has received intensive study with all factors carefully and wisely weighed. With the complete and intelligent cooperation of the medical profession of the state, Dr. Welch and Dr. Baker were able to inaugurate, or initiate, changes in organization, in policies and in procedures which were applicable to Alabama and which held every reasonable hope for increased progress and efficiency.

Administratively, both federal and state health organizations designate their chief function as leadership. Development of both state and county organizations, believing in

local self-government, as to functions is the first objective in such leadership. Having achieved complete local organization, continuation of leadership must manifest itself in many ways. It is in this endeavor that Dr. Baker and his associates considered basic needs of county health organization and the channels in which state leadership and aid to counties could be most wisely directed.

To avoid confusion in our thinking it appears advisable to indicate certain functions of the State Department of Health which should be classified as "all state."

1. Administrative policies and procedures, including all rules and regulations, laws, finance, supplies, etc.

2. Selection, training and placement of county personnel.

3. Laboratory service.

4. Collection of morbidity data.

5. Collection of vital statistics.

6. Supervision of public water supplies and sewage disposal plants.

7. Hotel and bottling plant and other inspections.

These specific functions are assigned by the State Health Officer to proper bureaus and divisions with competent personnel to adequately handle the responsibility. These services have improved on the basis of experience and will be kept abreast of current developments.

It is to the fields of advisory, supervisory and consultant services that this paper is mainly devoted. The type of state services rendered, as indicated by the term advisory, supervisory and consultant, is subject to a considerable variation both as to definition

*Read before a staff meeting of the State Department of Health, Montgomery, December 12, 1941.

of the words and to the content of the service in each category. From a practical working standpoint I should like to suggest the following interpretation.

Advisory—A process of personal observation and participation with individual discussion and group conferences utilized to arrive at a clear visualization of the practical application of approved methods and procedures in a solution of problems. Suggested modifications, increased intensity of services, etc., to promote accomplishment and increased efficiency of operation based on a broad understanding of the local area and local organization.

Supervisory—A process of analysis, of fact finding and formal reporting in relation to problems, program, organization and personnel of individual counties or conditions. The determination of accomplishment, or lack of accomplishment, through such a process of appraisal, broad in scope resulting in definite conclusions and recommendations.

Consultant—A technical or scientific process by which a proper diagnosis of a condition or problem is arrived at with specific recommendations for alleviation or correction of the condition, etc.

In view of the fact that the discussion and presentation in this paper deal with a district organization concerned with state function, it is advisable that a broad definition of services to be rendered be arrived at prior to a consideration of specific reasons for the existence of such an organization.

ORGANIZATION AND OBJECTIVES OF THE DISTRICT

The organization and objectives of the East Alabama Health District as originally set forth and approved by Dr. Baker are as follows:

1. *Organization:*

A staff consisting of a medical advisor (as director), advisory nurse, engineer, clerical assistant, pediatrician, dentist, tuberculosis clinician and nurse assistant, venereal disease advisor, and secretary. The area to be served initially, 7 counties, to be expanded as progress is made and in line with future organization development.

2. *Objectives:*

(a) To permit of an administrative study of factors deemed to be of paramount importance in future sound development of both county and district organizations for the state as a whole.

(b) Provision of specialistic services to county health departments in the fields of tuberculosis, venereal disease, infant and preschool hygiene, dental hygiene, environ-

mental sanitation and lay group education. To determine how each service can best be applied, its intensity and the results which might be reasonably anticipated, these services to be both advisory and consultant in nature.

(c) To study and improve health practices and procedures: Accurate appraisal of health problems in each county and to formulate an approach to their solution. All major health problems for the state are present in the district.

(d) Training of personnel requires that adequate facilities for observation of accepted health practices be made available. The district to be developed to meet this requirement.

REASONS UNDERLYING THE ORGANIZATION AND OBJECTIVES OF THE DISTRICT

The reasons underlying the organization and objectives as originally defined in the creation of the East Alabama Health District and some observations during the past four year period are as follows:

1. *Organization:*

The purpose of basing or providing joint facilities for field personnel in relation to the area to be served is primarily to effect coordination and balance in multiple services. The basic staff on district function is considered to be medical, nurse, engineer-inspectorial, and clerical advisory personnel. This is a group similar to that employed in county health department services.

Specialistic personnel in tuberculosis, venereal disease, pediatrics and dentistry were to be added for purposes of administrative study. This approach was intended, not as an experiment to determine the value and need of such personnel, but to permit of a more concentrated service to the counties in these fields. In the process of development of State Health Department personnel and services over a period of recent years it was realized that certain services, namely, pediatrics, dentistry and venereal disease, had been of low intensity because of the fact that one or two persons had served the entire state. This was considered to be a sound approach but it was deemed advisable to concentrate in a small area to determine the program which might be practical and the various possible approaches to the problems.

It was thought wise to add a district inspector to the staff based with other district personnel but certain administrative difficulties prevented this assignment. For practical purposes, however, one person has served in that capacity and kept in close touch with the district staff.

In the fields of maternal hygiene, nutrition, industrial hygiene, mental hygiene and others that might from time to time be added it was deemed advisable to inaugurate these services directly from central office divisions or bureaus.

While a district office and staff might be properly considered a branch state health office, yet it must be definitely appreciated that this set-up is not a stop-gap between counties served and the central office. Many county procedures are direct between county and central office, while in other procedures the district attempts to serve within specified limitations. Each district staff member is a representative of a division in the State Health Department and must seek technical guidance and counsel from that source. It is only in the matter of coordination and intensity of service that each must be guided by group opinion of the district staff.

In line with state planning as of May 9, 1940, that the districts within the state be rearranged both as to area and personnel assignment, the East Alabama Health District was expanded to 13 counties with two additions to personnel, medical and nursing, as of January 1, 1941.

2. Objectives:

(a) As an example of the first objective in an administrative study of county and district function it might be interesting to all of you to present the following brief analysis for the period 1938-1941.

Number of county health officerships available	13
Number occupying these positions	30
Number of positions available to nurses	39
Number occupying these positions	93
Number of sanitation officerships available	17
Number occupying these positions	40
Number of secretarial positions available	18
Number occupying these positions	26
Number of meat and milk inspectorships available	6
Number occupying these positions	8

Fifty per cent of all personnel listed was employed for a period of less than one year in the positions indicated.

The analysis is not sufficiently complete to present the various factors involved but the figures given are of sufficient significance to justify further consideration on the part of both county and state personnel.

Intensity and variety of services have been shown to be in direct proportion to the personnel employed in the individual county. This has been clearly demonstrated, particularly in regard to nurse and secretarial personnel within the past two years. After one year's experience in 1938 this fact was responsible for increasing nurse personnel in the original seven counties of the district to a minimum of two nurses on each staff. In the past two years counties have been forced to increase their secretarial and office personnel because of increased volume and detail work, coordinating with the organization projects on NYA and WPA, etc.

The problems of 67 counties are the problems of the state as a whole and, in considering each county and rendering service to it, the relationship and weight of each problem must be evaluated.

A realization of this fact prohibits the acceptance or teaching of any dogmatic principle which may or may not be applicable to the county under consideration.

(b) Provision of specialistic services to county health departments—Due in large measure to our previous organization experiences, it was decided that provision of a demonstration area for specialistic health services would prove of great value in the development of a greater health consciousness among the members of the medical profession and the general public, and, particularly, a higher appreciation of organized health effort directed by, and through, trained personnel.

In expansion of service in the fields of medicine and dentistry we, in the public health organization, are dependent to a considerable degree on the active and complete cooperation of the practicing medical and dental professions. Attempting to expand our service in the fields of maternity and infancy, preschool and school hygiene, venereal disease and tuberculosis to reach all population groups calls for materially increased participation on the part of the medical and dental professions. Even when these are used to a maximum degree, and including the active participation of the health officer to the extent of a minimum of

100 days of medical service, and the tuberculosis clinician in diagnosis, and in management of sanatoria, yet the possibilities of further expansion are realized.

Through frequent contacts with the professions, lay groups in educational work, and with the people individually through active participation in clinic operation and consultant service, the specialists on the staff focus quickly and constructively the attention of both lay and professional groups on improved health services being offered.

The possible approaches are many for the successful development of specialistic services, in coordination with local health departments, but the best methods are still in question and indicate the need for actual experimental test of approved approach, planning and teamwork in proper execution.

Tuberculosis service, because of length of operation, at least, is one of our best known and deeply appreciated. Venereal disease control is still in its infancy in Alabama but its development in the past two years has been encouraging. Pediatrics has a wonderfully productive field of effort ahead for application of medical, nursing and hospital service. The fringes of the field have only been touched to date.

County health department personnel in its numbers and quality, institutional facilities available, the degree of active medical and dental participation, and the extent of active lay support will largely determine the progress to which each county may aspire.

The only comment which I can add at this point is that the reception and accomplishments of our specialistic services have justified initial planning and hopes of progressive service.

(c) To study and improve health practices and procedures: The State Health Department expects that each county organization will devote itself sincerely toward the solution of its local problems, to the extent to which its personnel can go in making headway. By sound demonstration of the value of organized health service it is expected that personnel will be increased wherever possible to insure continued progress.

By intelligent use of the Appraisal Form for Local Health Services designed by the American Public Health Association and its application to each county in the area it is

expected that a clear-cut outline of health service and needs will be delineated. This measure has been applied annually to each county in the area and significant improvements are noted in most counties.

The initial improvement occurs in office procedure and the handling of routine records and reports. This provides a better basis for future planning of activities and development of a more progressive and intelligent program. The Appraisal Form indicates the problems as a whole within a county and the extent to which the local organization has been able to make headway with existing personnel.

This analytical process serves another important function in that the effect of advisory, supervisory and consultant services rendered by state personnel can be measured with fair accuracy. Intelligent recommendations and suggestions repeatedly ignored by local personnel, and failure to make progress where it is known to be feasible, clearly indicate the future course of state leadership and guidance.

Since health department practice is not a static one all of us to some extent participate in future modifications of procedures, programs, records and reports. Our combined thinking on and discussion of all phases of developments will result in a sound combination of scientific facts, approved practices and field experience throughout the state. It is considered advisable, however, to have an area set aside where in some portion of it approved experiments may be carried out and an accurate analysis made on that experience. That is one function to which the East Alabama Health District is obligated, not to carry the entire burden for the state but to form a focal point around which such experiments may be planned. We have freely participated in the endeavor to date and hope to continue constructive effort in this phase of our development.

(d) Training of Personnel: The utilization of the entire staff of trained personnel assembled in the area for the development of sound procedures, techniques and demonstrations to be employed in the practical field training of the several types of public health personnel in need of such field exposure is the plan for the center at Opelika.

The needs for such training are so acute in many parts of the country and the facilities still so inadequate that every effort will

be put forth to make available these facilities to personnel from other states. Already George Peabody College has worked out satisfactory arrangements whereby some of its public health nurses are to receive their field exposure in Alabama (Birmingham for urban experience and Opelika for rural experience).

In the development of the more didactic phases of the training center, it is contemplated to request participation of several members of the central office staff.

Training of personnel was not carried on in 1938 in order to permit the new organization to show reasonable development. Beginning in 1939-1941 the following types and numbers of personnel have been given field exposure.

	1939	1940	1941
Health officers	7	9	8
Nurses	10	9	23
Sanitation officers	5	14	20

Initially Lee County only was utilized for training purposes but during 1940 and 1941 five other counties were visited either for observation or actual field experience.

In further developing the facilities for training at this point it is desirable, and would be sincerely appreciated, that the central office personnel and field forces throughout the state should participate. This participation advisedly should be a continuing one with constructive suggestions or criticisms forwarded to this point to indicate modification of present procedure.

If evidence presents itself to you of instruction not given in a particular field or that certain instruction should by some means be more deeply impressed on trainees your advice to that effect will be most helpful and appreciated.

The training station will instruct only in accepted methods and procedures, which are approved as group opinion for the State Health Department. Individual opinions and variables will be reserved for presentation to field forces attempting to secure group approval. To adhere to teaching of group opinion is not particularly difficult and we believe it is the only method by which uniformity in public health procedure can be secured.

NEXT ANNUAL MEETING
MONTGOMERY
APRIL 21, 22, 23, 1942

BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

SPECIMENS EXAMINED

NOVEMBER 1941

Examinations for diphtheria bacilli and Vincent's	1,790
Agglutination tests (typhoid, Brill's, undulant fever, etc.)	463
Typhoid cultures (blood, feces and urine) ..	674
Examinations for malaria	1,129
Examinations for intestinal parasites	2,597
Serologic tests for syphilis, (blood and spinal fluids)	23,824
Darkfield examinations	40
Examinations for gonococci	1,777
Examinations for tubercle bacilli	1,457
Examinations for Negri bodies (microscopic)	33
Water examinations (bacteriologic)	866
Milk examinations	2,010
Pneumococcus typing	15
Miscellaneous	844
Total	37,519

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

GENERAL OBJECTIVES OF THE BUREAU OF PREVENTABLE DISEASES*

To begin with, all official health agencies as we know them today were created for the sole purpose of combating communicable diseases. The epidemics of plague, cholera, smallpox and other kindred diseases which swept the civilized and the uncivilized world led to the creation of official agencies to combat them. Little was known concerning their methods of spread and nothing as to their cause. The original control measures were limited almost entirely to quarantine—the very word derived from the Italian *quarante* or forty day detention period prescribed for vessels from plague-infected ports before being allowed to land and unload their cargoes. As scientific knowledge developed, the methods of control improved and it became possible to prevent the occurrence of certain epidemics rather than exclusively control them after they occurred. Our concept of health work has changed with the changing years and today we are a complex organization, concerned with the

*Read before a meeting of the staff of the State Department of Health, Montgomery, December 12, 1941.

improvement of the health of the people along many lines not conceived of a few years ago.

I wish to stress, however, that the communicable diseases and their control are fundamental to a health department whether federal, state or local. At the state level the particular bureau which I represent is, of course, only one of those concerned. Without the laboratory, diagnosis, treatment and control measures would be difficult. On the other hand remove the communicable diseases and the laboratory would have little excuse for its existence, certainly in its present form. The Bureau of Sanitation with its activities of water control, milk control, sanitation, malaria control and inspection was founded primarily because of the prevalence of certain of the communicable diseases.

Our very State Health Department, as others in other states, owed its existence to recurring epidemics of yellow fever and the early reports show its work to have been confined very largely to epidemic control. As funds became available and as it was possible to attack specific problems, divisions of the general organization were created. The Bureau as it now stands was the result of an amalgamation in 1927 of the Division of Venereal Diseases, originally created in 1918 because of war, the Division of Epidemiology and the Division of Tuberculosis. Each is still a division of the present Bureau and there was later added the Division of Industrial Hygiene.

So much for history.

To conform to the title of my discourse, may I briefly touch on each division, excepting the Division of Industrial Hygiene, which will be covered a little later.

The *Division of Epidemiology* is concerned primarily with the acute communicable diseases. First of all, there must be some method of knowing when, where, among what groups and at what age diseases occur. This means there must be a plan for the collection of these data—familiarily known as morbidity as contrasted to mortality data. We rely primarily on the practicing profession for reports as to the occurrence of a long list of diseases among their patients and on the county health departments for reports of cases encountered in the schools or elsewhere without medical care.

Reports are ordinarily received by us once each week unless there is a special reason for more frequent information as was the case during the epidemic of poliomyelitis this year when immediate reports were requested. These reports are compiled into a single state incidence each week and the U. S. Public Health Service in Washington notified as to the prevalence of certain diseases.

Then, with the capable help of the Bureau of Vital Statistics, punch cards are run on each case reported so that tabulations as to location, age, sex, race and time may be produced. These basic data are the guiding principles in control measures. Knowing the age distribution, the racial susceptibility, the seasonal trend and the areas of the state involved, intelligent planning can concentrate control efforts where they will do the most good. The division handles the morbidity data, makes recommendations as to the procedures to be followed (as in immunization) and is available for consultation services whether in diagnosis or in epidemic control. Sometimes the demands exceed the capacity to answer and we have to call on help as we did this year in bringing the state pediatricians into duty in connection with the poliomyelitis epidemic.

The division tries to insure that current practice in Alabama is in step with the best medical thought, although we must be conservative in our adoption of new procedures not thoroughly proven.

Division of Tuberculosis: Because of its importance as to cause of illness and death tuberculosis has the distinction of occupying the full time of a considerable group of our workers and of being set apart from the other communicable diseases. Tuberculosis mortality has been falling but to keep it on the downswing demands a diversified program which may be summed up in (1) diagnosis, (2) treatment, (3) rehabilitation, and (4) home care. In three of these fields we are active; namely, diagnosis, treatment and home care. The diagnostic clinics operated by the department, either through the travelling unit or through the sanatoria clinics, hope to uncover cases of tuberculosis in a stage when treatment offers a hope of real cure.

Treatment is necessary because without it not only will the individual go on to death but at the same time he infects his family and friends. Facilities at present include

eight sanatoria in the state supported jointly by certain counties and by the benevolence of the state in providing certain financial aid. Additional beds and additional grants from the state are urgent musts. The department as its contribution provides five sanatoria nurses and also provides the medical director for these five institutions. Pneumothorax refill stations are conducted at each institution or, in the case of Jefferson and Mobile, at a downtown clinic, and at present at three other points in the state—Tuscumbia, Selma and Eufaula. Lack of funds alone prevents expansion of this service. Results obtained to date should be a source of satisfaction to those carrying on the treatment program.

Rehabilitation is a phase of tuberculosis treatment which is still lacking in Alabama except sporadically but may one day receive its due prominence.

Home care is relegated very largely to our county health departments but it should embrace not only the individual too far advanced or too poor to pay for sanatorium treatment but also the ex-sanatorium patient not yet ready to return to normal living.

Division of Venereal Diseases: The organized attack on the venereal diseases had its beginning during the last World War, lagged for several years following the conclusion of that struggle, and received a new impetus when the present Surgeon General of the U. S. Public Health Service took office. Today we are faced once more with the exigencies of war and the necessity of augmenting our drive against these diseases.

Fortunately, we have a well organized system already established which can, with the proper financial backing, expand on short notice. Our attack is based along the same lines as in other communicable diseases except that treatment is an important function, not for the sake of the man alone but also as a sterilizing agency for his infection.

We are attempting to find cases, to see that they are given sufficient treatment to at least render them non-infectious, and to stop sources of infection. Case finding is going on constantly through the activities of the medical profession and the county health departments. Each case found means an immediate search for the source of that case and the examination of individuals to whom

the disease may have been given. Incidentally, the examination of registrants a year ago resulted in the finding of over 17,000 men with positive serologic tests and was the greatest case-finding program ever instituted in this country. Today our job is to see that all men of military age who have a venereal disease are rendered fit for duty. Our other job is to see that they are kept fit.

In closing I can only quote what Dr. S. W. Welch said in 1917: "If Alabama does her part toward winning the World War, she must keep her people well. In this country there is no clear line of cleavage between the military and civilian population. The army is made up of boys from civil life and they return to civil pursuits. If the civil population is not up to standard then the army will be inefficient. Again if the producers are not safeguarded, there will be no productiveness and the means with which to conduct the war will not be forthcoming."

We are today faced with the same challenge.

TREATMENT IN EARLY SYPHILIS

The question is often asked, "How long should a patient with early syphilis be treated before he is discharged as supposedly 'cured'?" There is a rule of thumb that should be followed and that is treat the patient for one full year after his blood has been rendered negative. In a sero-positive primary or secondary syphilis one should expect to have the blood results reversed around the fourth to sixth month. It is well to refrain from blood testing until the fourth month and then the test should be made monthly until a negative is obtained. However, if, after six months of treatment, the blood is still positive, one should check the patient carefully since a continued positive blood test for six months or longer in early syphilis forebodes serious trouble for the patient. It usually means progressive involvement of some vital organ which, if not checked, will result in serious damage.

Since most patients consider a negative blood test as absolute evidence of the cure of their syphilis it is well to refrain from telling the patient that his blood test is negative. It is much better to say his blood shows great improvement but at least one full year's treatment is still necessary. As our education of patients advances we may be

able to tell them when their blood becomes negative, provided the patient understands the necessity of fifty-two weeks of treatment following his negative blood test.

BUREAU OF MATERNAL AND CHILD HEALTH

J. S. Hough, M. D., Acting Director

A PROPOSED EDUCATIONAL PROGRAM*

By

John Newdorp, M. D.
Consultant in Obstetrics

It has become more and more apparent to the consultants in the Bureau of Maternal and Child Health that one of the greatest obstacles to progress is the almost entire lack of any medical background on the part of the patient. This probably applies to other aspects of public health work as well as to the maternal and infant health programs.

We find that most of the patients seen in the maternal clinics have very little knowledge as to what constitutes an adequate diet. They often have a very limited knowledge as to what good health habits are. They have no knowledge of the reasons for good prenatal care, no knowledge of the physiology of pregnancy, and no knowledge of the proper care and feeding of infants. Their ignorance in fields other than maternal hygiene is probably as marked.

We find, therefore, that the average maternal clinic patient is not aware of the need of prenatal care, nor does she have the background to appreciate what is being done for her. She does not have the background to follow the instructions given her. What is more, most of the patients coming to the clinic are difficult to educate. This may be because of their age and it is also in part due to the fact that many of them have had previous pregnancies without any difficulty and can see no reason why trouble should arise in the future.

It is also true that the husbands of these women have even less background than the women do. What education the women do receive in the prenatal clinics and the ma-

ternal classes is not acquired by the husband and for that reason there is often lack of cooperation from him. This in turn is often responsible for the fact that the patient does not carry out the instructions given her.

Now these facts apply primarily to our clinic patients. However, during 1940, there were about 10,000 patients who were seen in the maternal clinics, leaving at least 50,000 patients cared for outside of the clinics. Out of these we estimate that at most 10,000 to 20,000 are given adequate prenatal care and instruction by their private physicians. The 10,000 attending our clinics are given some education along these lines, although it is handicapped for the reasons that we have just mentioned. There remain probably at least half of all mothers in Alabama who receive very little education of any sort along these lines. Many of these in this group are the patients of private physicians who are not in the habit of giving them prenatal care. If there were some means of making the patient aware of this need it might serve as a much needed stimulant to these physicians. Their reluctance has been in part due to the conviction that this service is not of value, but our clinics have clearly demonstrated that such care is a most significant factor in reducing maternal mortality rates.

We are, therefore, faced with a two-fold problem. First, at least half of the mothers in the state are not in a position to know what they need in the way of medical and prenatal care. Second, the remainder, to a considerable extent, do not have sufficient background to allow them to appreciate this care and to enable them to follow the instructions of their physician or clinicians. Even this instruction which they do receive is of necessity somewhat limited by the time factor.

To meet this situation we have long had in mind some type of educational program. A beginning has been made in this field in Cullman County and a report of this work has been printed in this Journal (August 1941, p. 75). In brief, the plan is as follows: We hope to introduce into as many schools in the state as possible a course which will give the high school boys and girls of Alabama the background which they now do not get. Naturally this will have to be done in conjunction with the Department of Education, but in the areas where our plans have been

*Read before a meeting of the staff of the State Department of Health, Montgomery, December 12, 1941.

broached to them they have been most co-operative. The material that is to be included in this course has not yet been fully prepared. At present an outline of twenty lectures is being used in one of the schools in Wilcox County. We hope that this outline may be added to by members of the State Health Department so as to include in greater detail other fields besides those of maternal and infant health. At the present time no decision has been reached as to who shall give these courses. We hope to have a complete outline with references so that the presentation of such a course would not involve very much work in preparing the material. The lectures in the schools might be given by the county health officer or the county health nurse. In some communities local physicians are interested in presenting some of the lectures. Ultimately, perhaps, the teachers in our public school system can be given courses that will enable them to carry part of this work and it is only with their cooperation and aid that this program can be successful.

As we see it, the advantages of this plan would be as follows: First of all, the material would reach all groups, namely, those that ordinarily do not come under the influence of the county health department. Second, such a course given in the schools might be subject to examination, making the material a part of the knowledge of the student to a much greater extent than would such lectures given elsewhere. Third, this material would reach the individuals at an age when it will do them the most good. At this age the minds are receptive and health habits are not as well formed as they are in older individuals. Further, from a maternal point of view, they do not have any past experience to influence them. We have found it difficult to impress a mother who has had three or four pregnancies, with a midwife in attendance at the time of delivery, and without any prenatal care, that she needs this type of supervision. What is more, the physical status of individuals of this age is such that this instruction will enable many of them to retain good health throughout life. So much of our instruction reaches patients in whom the damage has already been done and if our work is to be preventive it should be started early. Fourth, such an educational program could be made to reach males who are at present not reached by the classes and

the prenatal clinic instruction. This should lead to greater cooperation in the family groups, and, as we have pointed out before, lack of this cooperation at present often makes it impossible for the woman to carry out the procedures and practices which she has been taught. Fifth, the public health work in any community would be made easier among a lay group with such a background.

BUREAU OF VITAL STATISTICS

Leonard V. Phelps, S. B. in P. H., Director

BIRTH RATES PER 1,000 POPULATION ACCORDING TO COLOR AND COUNTY CORRECTED FOR RESIDENCE 1940

In 1940, there were 62,943 births to mothers whose residence was reported as being in Alabama. The birth rate based on the above figure was 22.2. Correspondingly the white and colored rates were 21.0 and 24.4, respectively.

Population data from the U. S. Census of 1940 not being available made it impossible to compute urban and rural birth rates by color. However, as usual, the resident birth rate of rural mothers (23.4) was very much higher than that of the urban (19.6).

The accompanying table affords a record for 1940 according to county.

BIRTH RATES PER 1,000 POPULATION ACCORDING TO COLOR AND COUNTY, CORRECTED FOR RESIDENCE OF THE MOTHER: ALABAMA, 1940

COUNTIES	TOTAL			Total Urban*	Total Rural*
	Total	White	Colored		
ENTIRE STATE	†22.2	†21.0	†24.4	19.6	23.4
Autauga	25.3	23.8	26.5	37.8	23.4
Baldwin	24.5	23.0	29.1		24.5
Barbour	25.9	20.0	30.6	23.7	26.4
Bibb	25.4	24.5	27.3		25.4
Blount	21.6	21.8	18.1		21.6
Bullock	28.2	14.2	32.2	19.3	29.9
Butler	22.7	19.5	26.2	17.8	23.6
Calhoun	20.8	20.1	23.7	20.6	17.9
Chambers	16.0	14.7	18.0	18.8	15.6
Cherokee	26.7	26.2	31.9		26.7
Chilton	21.7	21.0	25.2	18.6	22.2
Choctaw	24.5	20.8	27.8		24.5
Clarke	25.1	20.2	29.6		25.1
Clay	22.8	21.8	27.9		22.8
Cleburne	26.7	26.7	26.0		26.7
Coffee	20.2	20.0	20.9	21.7	19.9
Colbert	20.9	21.3	19.8	16.4	23.9
Conecuh	24.2	20.8	28.5		24.2
Coosa	21.8	16.4	31.2		21.8
Covington	20.6	19.9	24.3	21.9	20.0
Crenshaw	20.7	18.6	25.1		20.7
Cullman	25.6	25.6	23.9	25.3	25.6
Dale	22.3	20.7	27.7	22.7	22.3
Dallas	24.8	17.0	27.6	19.7	27.7

†Includes births in federal and state institutions.
*Exclusive of births in federal and state institutions which could not be allocated.
(Continued on page 258)

BIRTH RATES PER 1,000 POPULATION ACCORDING
TO COLOR AND COUNTY, CORRECTED FOR RES-
IDENCE OF THE MOTHER: ALABAMA, 1940
—Concluded

COUNTIES	TOTAL			Total Urban*	Total Rural*
	Total	White	Col- ored		
DeKalb	20.7	20.7	19.8	20.7	20.7
Elmore*	20.3	17.4	24.6	21.9	20.1
Escambia*	22.0	20.6	25.0	21.6	22.2
Etowah	22.4	22.6	21.2	20.9	24.4
Fayette	20.8	21.1	18.8	21.6	20.6
Franklin	25.4	25.2	28.6	25.3	25.4
Geneva	20.8	20.5	22.4	13.8	21.5
Greene	25.9	17.7	27.5		25.9
Hale	24.8	15.6	28.3		24.8
Henry	23.8	16.9	31.1		23.8
Houston	18.1	17.4	19.4	14.1	20.5
Jackson	24.8	25.5	14.9	31.6	24.4
Jefferson	20.8	20.0	22.1	19.5	23.8
Lamar	20.8	20.4	23.1		20.8
Lauderdale	21.3	21.7	19.2	19.6	22.2
Lawrence	22.7	24.9	15.2		22.7
Lee	23.4	17.5	27.9	19.6	25.5
Limestone	25.1	25.6	23.3	18.0	26.1
Lowndes	30.2	13.6	33.2		30.2
Macon*	26.7	14.5	29.6	22.5	27.5
Madison	21.6	22.2	20.0	19.9	22.0
Marengo	21.7	18.8	22.8	15.5	22.5
Marion	22.5	22.6	19.9		22.5
Marshall	23.5	24.0	7.7	18.7	24.6
Mobile*	21.9	21.3	23.0	21.2	23.0
Monroe	26.3	22.0	30.2		26.3
Montgomery*	17.7	17.2	18.2	17.2	18.8
Morgan	20.0	20.9	16.0	19.6	20.3
Perry	26.0	20.6	28.1		26.0
Pickens	24.5	23.3	25.9		24.5
Pike	20.5	19.8	21.2	14.4	22.1
Randolph	21.6	19.7	28.0	21.4	21.7
Russell	21.5	16.5	25.0	16.0	25.6
Shelby	21.0	21.8	18.7		21.0
St. Clair	23.4	22.9	25.3		23.4
Sumter	26.5	13.5	29.9		26.5
Talladega	25.3	22.8	29.9	20.5	27.4
Tallapoosa	22.6	21.0	26.0	21.4	22.9
Tuscaloosa*	19.0	19.0	18.8	17.6	19.8
Walker	23.1	24.0	16.1	23.1	23.2
Washington	28.0	28.4	27.5		28.0
Wilcox	29.5	20.8	31.9		29.5
Winston	21.8	21.9	8.8		21.8

†Includes births in federal and state institutions.
*Exclusive of births in federal and state institutions
which could not be allocated.

BUREAU OF SANITATION

D. S. Abell, M. S. in S. E., Director

THE CLEANING AND BACTERICIDAL
TREATMENT OF MILKING
MACHINES

By

U. D. Franklin, B. S., M. S.
Senior Sanitarian

The use of milking machines provides an additional source for bacteria in milk, unless efficient methods of cleaning and disinfecting them are employed every day. The care of milking machines involves two distinct procedures: (a) cleaning and (b) bactericidal treatment.

The greater the surfaces with which milk comes in contact, the greater the number of bacteria added from these surfaces since only approximate sterilization is possible for dairy utensils. If a milk surface is dirty from either milk solids or grease film, the

number of bacteria which are added to the first milk coming into contact with this surface may be enormous. A milking machine provides a number of recesses, crevices, valves, and surfaces that cannot be exposed to ready view during or after cleaning and which may hold milk solids or grease films. In addition, the rubber milk tubes and teat-cup liners in time become checked with innumerable cracks which will accumulate and hold milk solids. The mere drawing of cleaning solution through the machine does not provide enough scrubbing effect to remove milk solids from these.

The following method of cleaning milking machines is practical and effective if done properly. It is emphasized that this must be done after each milking.

1. After milking is completed, a pailful of clean cold water should be drawn through each unit. The teat-cups should be alternately raised from and lowered into the water in order to admit air which aids in the removal of milk. This pre-rinse should be done immediately after milking since, if it is delayed long enough for the milk film to dry, cleaning is very much more difficult. In addition, acids resulting from bacterial growth injure the rubber parts and shorten their life.

2. As soon after the pre-rinse as possible, each unit should be completely taken apart. Every part should be carefully scrubbed with hot water to which has been added an effective dairy cleaning compound. To do an effective job of cleaning a good brush or searcher to fit every part is essential. Metal searchers or probes are more effective than brushes for cleaning the small rubber tubes. A liberal application of elbow grease is also an essential since no satisfactory substitute has yet been devised for it.

3. At regular intervals, although it may not be necessary after every cleaning, the rubber parts should be examined for cracks or breaks, excessive sponginess and checking. Obviously, if a tube leaks it must be discarded. However, many rubber parts are used after excessive sponginess and checking occur. Spongy rubber is porous. Milk solids accumulate in the pores and are practically impossible to remove. Checks or tiny cracks appear on the surface of the rubber parts after they have been used for a time, especially at the points where the rubber is repeatedly bent or flexed in the milking

process. These cracks become filled with milk. When tension is removed from the part, as is true when the machine is disassembled for cleaning, the rubber resumes its normal shape which causes the cracks to close. Metal searchers or probes which stretch the rubber (and thus open the cracks) as they are passed through the tube remove more milk or milk solids from these cracks than do brushes which only brush the surface and do not enter the tiny cracks. Rubber parts which show much evidence of checking on milk surfaces when bent or inverted should be discarded.

The bactericidal treatment of milking machine pails is done with steam in the same manner as that required for milk pails, cans, etc. Teat-cups and milk tubes are not usually steamed since it is not very effective and because regular steaming deteriorates the rubber and materially shortens its life. Immersion of rubber parts in hot water at 180° F. for 30 minutes, or boiling for a short time, is sometimes employed. This also affects the life of the rubber to some extent and is frequently not effective because of trapped air in the tubes or parts.

Because of the above drawbacks to heat, chemicals are usually used for the bactericidal treatment of rubber parts of milking machines. The two effective and common chemicals used are chlorine and caustic. Solutions of 200 parts per million of available chlorine or of 0.3 to 0.5 per cent caustic (NaOH), together with an exposure period of several hours, are necessary. Each container of chlorine compounds intended for dairy use usually carries instructions for making solutions of 100 and 200 ppm. Where caustic is used, it is a common practice to use commercial lye which can be purchased from most grocers. A 12-ounce can of this lye is dissolved in a gallon of water and placed in a jug for the stock solution. Eight ounces (a half-pint) of the stock solution mixed with a gallon of water makes a disinfectant solution of approximately 0.4 per cent caustic strength. Caustic solutions are suitable in dairy use only for rubber parts which can be left in the solution for several hours since solutions sufficiently strong to kill bacteria in a minute or two, as is desired for bottles and pails, are strong enough to cause serious damage to the hands and skin.

There are two common methods of applying chemical solutions to milking machine

parts. Perhaps the most common is a soaker rack in which the assembled teat-cups and milk tubes are hung with the long milk tube attached to a pet cock from the disinfectant reservoir and with the teat-cups suspended in an upright position so the upper end is level with the reservoir. When the pet cock is opened the solution passes down the milk tube and rises in the teat-cups until they are full. The teat-cup assembly is left filled with solution in the soaker rack until the next milking time. If chlorine solution is the chemical used, it is only necessary to empty the solution from the tubes and connect the milk and air tubes to the head of the machine to place it in use. If caustic solution is used, a gallon or two of weak chlorine solution should be drawn through each unit after it is assembled in order to rinse it free of caustic.

The other method is to immerse the rubber and small metal parts in a stone or earthenware crock filled with the chemical solution. This is best done while the unit is completely disassembled. If the assembled unit is immersed, it should be lowered into the solution in such way that it completely fills, since trapped air will prevent the solution from coming into contact with some parts of the milk surfaces. Again, if caustic is used, the unit should be rinsed with a chlorine solution before it is used.

Oftentimes an overlooked source for contaminating machine drawn milk is found in the lack of attention given to cleaning check valves, stanchion hose and vacuum lines. Some condensation of milk vapors in these occurs during normal operation. If a machine can is drawn full, milk is then sucked up into these. This furnishes an ideal medium for bacteria. These bacteria may later enter the milk from condensate running back into the can. The check valve should be cleaned after every milking along with the machine head. The air or stanchion hose and vacuum lines should be immediately cleaned after milk has been drawn into them from a full pail, and at intervals of one week to one month when operation is normal. The stanchion hose can be scrubbed in the same manner as the long milk tubes. The vacuum lines can be flushed by drawing water or cleaning compounds through them.

If proper attention is given to thorough cleaning followed by effective bactericidal treatment of milking machine pails and

parts after every milking, and if check valves, stanchion hose and vacuum lines are cleaned as often as necessary, a low count milk can be produced. However, it is emphasized that thorough cleaning and bactericidal treatment of all parts coming into contact with milk must be done following each milking. Most of the trouble with high counts in machine drawn milk is from neglect or omission of thorough cleaning. Using rubber parts too long is the other common cause for these high counts.

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	1941		
	Oct.	Nov.	Estimated Expectancy Nov.
Typhoid	19	10	29
Typhus	32	37	35
Malaria	781	667	427
Smallpox	1	0	1
Measles	67	129	26
Scarlet fever	161	235	152
Whooping cough	65	67	74
Diphtheria	144	155	200
Influenza	58	312	223
Mumps	22	66	53
Poliomyelitis	71	49	3
Encephalitis	1	1	2
Chickenpox	9	77	93
Tetanus	4	3	7
Tuberculosis	203	207	226
Pellagra	10	16	15
Meningitis	3	2	6
Pneumonia	70	180	224
Ophthalmia neonatorum	2	1	1
Trachoma	0	0	0
Tularemia	0	0	0
Undulant fever	11	4	3
Dengue	2	0	0
Amebic dysentery	1	1	0
Cancer	156	167	0
Rabies—Human cases	0	0	0
Positive animal heads	18	13	---

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

Book Abstracts and Reviews

Occupational Diseases: Diagnosis, Medicolegal Aspects and Treatment. By Rutherford T. Johnstone, A. B., M. D., Director of the Department of Occupational Diseases, Golden State Hospital, Los Angeles, California; Formerly Assistant Professor of Medicine, University of Pittsburgh School of Medicine. Cloth. Price, \$7.50. Pp. 558, illustrated. Philadelphia and London: W. B. Saunders Company, 1941.

Any physician who does industrial work, either as a specialty or as a side line, will find much of value in Johnstone's Occupational Diseases. First of all there is an interpretation of the Workmen's Compensation Act and a discussion of the modifications of the law in the various states in the Union. In Alabama the law affords benefits for injuries due to trauma but excludes those which result from acute or chronic occupational poisoning. Despite the fact that the latter type of injury is not compensable under the laws of Alabama, the physician who does industrial work should learn

a great deal about these hazards, and those who are interested primarily in diagnostic work would often find the solution of some complicated diagnostic problem in the effect of a chemical absorbed through the individual's occupation. These various poisons cover a large range of chemical substances, including solvents, gases, metals and dusts.

The chapter on back injuries illustrates not only the various types of spine injuries but describes in detail the various congenital deformities which might easily be blamed on trauma. This chapter is well illustrated by x-ray pictures and diagrams of the tests used in diagnosis.

Other chapters deal with injuries due to heat, cold and electricity, occupational dermatoses, and the relation of trauma to hernia. The illustrative case records are well chosen and emphasize points brought out in the text.

C. K. W.

Who Is My Patient? By Russell L. Dicks, B. D. Cloth. Price, \$1.50. Pp. 149. New York: The Macmillan Company, 1941.

This religious manual for nurses attempts to guide the nurse in the realms of religion. Science is focused on the quantity of life and its basic interest is the prolongation of life. Religion is focused on the quality of life and its basic interest is the meaning of life. It is important that the nurse not only be aware of the spiritual needs of the individual but also to understand the means and method which organized religion has for meeting these needs.

A detailed explanation of how the church deals with these fundamental needs of the individual is given, how spiritual needs are complicated and are usually masqueraded as something else, such as guilt, loneliness or fear, the need for close cooperation between the clergyman, physician and nurse in meeting a crisis situation before an operation, long convalescence, physical handicap, and facing death. Suggestive help and written prayers for all occasions which can be used by the Catholic, Jew or Protestant are also given.

This book could be of real value to any nurse, as health without a purpose is senseless. Are we treating disease or the people who have the disease?

B. LeF.

Infant Nutrition. By W. McKim Marriott, B. S., M. D., Late Professor of Pediatrics, Washington University School of Medicine, and Physician in Chief, St. Louis Children's Hospital, St. Louis; Revised by Philip Charles Jeans, A. B., M. D., Professor of Pediatrics, College of Medicine, State University of Iowa, Iowa City. Cloth. Price, \$5.00. Pp. 475. St. Louis: The C. V. Mosby Company, 1941.

This is a good book. It should be read by all pediatricians. It would be a useful addition to any medical library and to hospital libraries where there is a nurses' training center. The first chapter is devoted to growth and development. Energy, protein, carbohydrate, fat, mineral and water metabolism are discussed. The chapter on vitamins has been brought up to date. The statements concerning the optimum vitamin D re-

quirements in infancy give us something to think about. Infant feeding is taken up in detail. Malnutrition and the various deficiency diseases are discussed, as well as the common infectious diseases. One chapter deals with prematurity. Whereas this is a book for the specialist to read and should be available for a reference book in libraries, I do not advise that it be purchased by county health departments or by general practitioners, as I feel there are other pediatric books that would serve more adequately for general purposes.

B. M. B.

Synopsis of Applied Pathological Chemistry. By Jerome E. Andes, M. S., Ph. D., M. D., F. A. C. P., Director of the Department of Health and Medical Advisor, University of Arizona, Tucson; Formerly Assistant Professor of Pathology and Clinical Pathology, West Virginia University Medical School; and A. G. Eaton, B. S., M. A., Ph. D., Assistant Professor of Physiology, Louisiana State University School of Medicine, New Orleans. Cloth. Price, \$4.00. Pp. 416 with 23 illustrations. St. Louis: The C. V. Mosby Company, 1941.

The best test of the value of a book is how it stands up under daily use. This little volume, small enough to put in one's coat pocket, is packed full of valuable information as to the technique and significance of various diagnostic laboratory tests. The beginner might find the descriptions as to technique a little brief, but any physician who has had laboratory experience and any trained technician will find the descriptions quite adequate. Tables showing the interpretation of various abnormal findings are particularly valuable. An occasional error has crept into the description of blood chemistry methods, particularly the description of the determination of inorganic phosphorus and the method for blood cholesterol. These errors, however, appear in several other textbooks dealing with the same subject and it is remarkable that no author has had his attention called to these obvious mistakes.

The book is divided into five sections covering the subjects of blood, spinal fluid, urine, functional tests, and gastric analysis and metabolism. The authors have not packed their pages with numerous techniques for doing these tests but have included only one or two which appear most practical. They have simplified the work of the laboratory technician by summarizing materials needed for each test and give the preparation of reagents and solutions. With each test they have included normal values and those diseases which may result in an increase or decrease of the normal.

C. K. W.

The Premature Infant. By Julius Hays Hess, M. D., Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine; Attending Pediatrician, Illinois Research and Educational Hospital, Cook County and Michael Reese Hospitals; and Evelyn C. Lundeen, R. N., Supervisor, Premature Infant Station, Sarah Morris Hospital, Chicago. Cloth. Price, \$3.50. Pp. 309. Philadelphia: J. B. Lippincott Company, 1941.

This is a very excellent book that has been written by two authorities on the medical and nursing care of the premature infant. It should be read by every physician and nurse who is interested in premature and newborn babies. We

advise every county health department in the state to add this book to its library. The subject matter is covered completely and clearly. The book contains many pictures and illustrations. Several city and state-wide plans for the care of the premature infant are mentioned and their importance recognized.

However, a statement is made which should not be in the book without further explanation. "A nurse's experience with premature infants, therefore, makes her more adept in caring for the sick full-term baby. It is often advisable to put such a sick infant in the nursery for premature infants." I think a sick infant should never be put in the nursery for prematures, irrespective of whether or not the illness is due to an infectious disease.

B. M. B.

Hemorrhagic Diseases, Photo-Electric Study of Blood Coagulability. By Kaare K. Nygaard, M. D., Former Fellow in Surgery, the Mayo Foundation; Former Assistant Surgeon, the University Clinic, Oslo; Fellow of the Alexander Malthe Foundation for Research in Medicine, Surgery and Gynecology. Cloth. Price, \$5.50. Pp. 320, illustrated. St. Louis: The C. V. Mosby Company, 1941.

This monograph, written by a former Fellow in Surgery of the Mayo Foundation, deals with the studies of blood coagulability by means of the photo-electric cell. Being dissatisfied with the available means of determining the velocity of blood coagulation, he began to experiment with the photo-electric cell to see whether it could be used to obtain a more accurate determination of the velocity of blood coagulation. He has spent many years in research on this principle and this monograph sets out his findings.

The volume is divided into three portions. The first part, which is made up of five chapters, deals with the history of the various methods of studying velocity of blood coagulability as well as a discussion of the photo-electric method. The second part deals with the coagulation of blood plasma; the interaction of thrombin and fibrinogen and the coagulant effect of thromboplastin. Part three deals with the application of the principles cited in the first two parts to clinical conditions such as hemophilia and thrombocytopenic purpura. Since the new vitamin K is closely interrelated with blood coagulation, the author discusses the history of its discovery, its physiologic and pharmacologic effects as well as the symptoms manifested when it is deficient in the body. Following this is a chapter on the hemorrhagic tendencies in diseases of the gallbladder, bile ducts, pancreas and liver with several case histories to clarify the points brought out. Finally, a chapter on the hemorrhagic diseases of the newborn, with a number of appropriate case histories, closes the monograph.

At the end of each chapter, the author has added an extensive bibliography, indicative of the enormous amount of work that has gone into the compilation of this monograph. The index facilitates easy finding of the desired subject matter.

This book is so highly technical that unless one has had sufficient laboratory training and back-

ground one would find it unappealing. However, to those whose work deals primarily with matters of scientific research, this book will have much to offer. It is masterfully presented by one who knows his subject thoroughly. It is recommended only for those whose work is essentially of a research nature in the field of hematology and kindred fields.

H. J. C.

A Primer For Diabetics: An Outline for Treatment for Diabetics with Diet, Insulin and Protamin-Zinc Insulin, Including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions. By Russel M. Wilder, M. D., Ph. D., F. A. C. P., Professor and Chief of the Department of Medicine of the Mayo Foundation, University of Minnesota; Head of Section on Metabolism Therapy, Division of Medicine, the Mayo Clinic. Seventh edition, reset. Cloth. Price, \$1.75. Pp. 184. Philadelphia and London: W. B. Saunders Company, 1941.

This primer by Wilder, now in its seventh edition, needs no introduction to those of the medical profession who have been treating the diabetic patient. The fact that this is the seventh edition speaks for its popularity, which is well accepted.

The author of the primer, an international authority in the field of metabolism, presents the subject of diabetes and all it entails with the clarity, simplicity and thoroughness characteristic of the previous editions. It is written in language that the layman can understand, but there are several technical sections written primarily for the physician.

It is difficult to conceive of any modern, well-informed physician attempting to treat diabetes without teaching the patient something about the disease. Nowhere can be found a more concise, easy-to-understand book than this primer. This present edition was necessitated by new data on the administration of insulin.

The volume is divided into nine sections. At the end of each there are questions and answers on the text with the exact page where the material may be found. At the end of the book is a food monograph from which the physician may calculate the patient's dietary needs. The book is well indexed and many diets and substitute foods are given.

H. J. C.

Essentials Of General Surgery. By Wallace P. Ritchie, M. D., Clinical Assistant Professor, Department of Surgery, University of Minnesota Medical School. Cloth. Price, \$8.50. Pp. 813, with 237 illustrations: The C. V. Mosby Company, 1941.

The above book is intended admittedly for the undergraduate student of surgery and as a means of rapid review of given subjects by men in the practice of surgery. As a book for the undergraduate it would seem to answer the purpose in a very satisfactory manner. However, outside reading would be necessary as in most instances sufficient detail is not included. The manner of presentation is somewhat individual, the different subjects being taken up from the point of view of classification, etiology, differential diagnosis, treatment, physiology and pathology. The

treatment is, of course, very fragmentary and that phase of the book would be of no particular value to the person engaged in the practice of surgery. A rapid review of the important points in the consideration of individual diseases is, however, of value to the surgeon. The reviewer feels that the work covers the field for which it was intended in as satisfactory a way as possible in the space which is made use of. The portions on certain specialties written by other men on the faculty of the University of Minnesota Medical School are indicated in the contents.

J. L. B.

The Complete Weight Reducer. By C. J. Gerling. Cloth. Price, \$3.00. Pp. 246. New York: Harvest House, 1941.

This book consists of an alphabetical list of various diets, drugs and other devices used in the treatment of obesity. Each subject is clearly described. Many are thoroughly debunked. Sane diets, exercise and sports are recommended. Much emphasis is made of the danger of self-medication and the use of fad diets and drugs of unproved value—reducing teas, chewing gums and reducing gum drops.

It answers some questions a doctor might be asked by a patient but is probably more suited to the patient who wants to know whether some method of reduction he has read about is really worth while. We cannot keep up with data on all the reducing fakes and frauds, but most of them can be found in this book.

C. K. W.

The March Of Medicine: Number V of the New York Academy of Medicine's Lectures to the Laity, 1940. Cloth. Price, \$2.00. Pp. 154. New York: Columbia University Press, 1941.

For five years the New York Academy has given to the public a series of lectures dealing with medical subjects. A previous series has been reviewed in these columns. The present volume contains six talks. Abraham Myerson writes on The Inheritance of Mental Disease. It is an article of mediocre value, probably confusing to the lay reader. Perrin H. Long in a talk on Chemical Warfare Against Disease gives a fascinating picture of the development of the sulfonamide drugs. Paul Resnikoff's The Story of the Blood is interesting but rather technical from the lay point of view. Thomas M. Rivers gives a good picture of the viruses, and Richard M. Hutchings in The Ascent from Bedlam depicts the development of modern psychiatric hospitals. Chevalier Jackson, who would be able to speak with authority, devotes his chapter to the development of the bronchoscope, a subject that would probably appeal more to the physician than to the layman.

On the whole, the reviewer found these talks well presented. They would be interesting and informative for the lay reader interested in medical progress and the physician would probably enjoy them as light essays.

P. M. S.

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PERIPHERAL CIRCULATORY FAILURE (SHOCK) IN INTERNAL MEDICINE*

By

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The scope of this discussion possibly strikes a strange chord since shock has been regarded as strictly within the province of the surgeon for numerous medical generations. Even now too few realize that not only may it occur in certain medical conditions but that it does so frequently.

The term shock was first used by James Latta of Edinburgh in 1795 to describe the clinical condition which results from injury.¹ He believed that it was due to "a state of collapse of the circulation." It is now proven that such is the case and, further, that it is the peripheral circulation which suffers the collapse. The designation peripheral circulatory failure is now preferred to shock, as it is more descriptive and scientifically more accurate.²

Primary and secondary shock are common diagnoses. Peripheral circulatory failure of the type usually called primary shock is characterized by suddenness of onset and tendency to recovery, and is prone to happen under the influence of fatigue, fear or exposure. This occurs after severe trauma and is mainly of syncopal origin. That which is ordinarily termed secondary shock either follows the first type or occurs independently some time after the occurrence of the precipitating agent. Each of these types has been included under the all-inclusive term,

surgical shock, but both are due to one and the same thing, regardless of the cause or the terminology—a discrepancy between the circulating blood and the capacity of the vascular tree.

This discrepancy may occur from a variety of causes, and the loss of fluid may be absolute or relative. With hemorrhage, vomiting or diarrhea, there is actual loss of fluid from the body. On the other hand, reflex dilatation of the peripheral vessels from trauma, poisoning or infections causes loss of fluid from the blood into the tissues. In either instance a vicious circle may be set up as outlined by Freeman. Various agents may be responsible for a decreased blood volume. This leads to vasoconstriction, with eventual lowering of the blood pressure as this compensatory mechanism fails. The vasoconstriction causes reduced blood flow, which produces tissue stasis and, in turn, tissue anoxia and capillary damage. Damage to the capillaries is represented by increasing permeability of the endothelium with an exudation of plasma into the tissues, resulting in a further loss of blood volume. The vicious circle once established apparently continues until it reaches an irreversible point, when therapy is of no avail.

This explanation offers a physiologic basis for the familiar symptoms and signs of this condition. The skin is pale, frequently described as cold and clammy, due to peripheral vasoconstriction and decreased blood flow. The lips, ears and nails are cyanotic, evidence of tissue anoxia. The blood pressure is lower than normal and the pulse is rapid and of poor quality, both due to the relative decrease in blood volume. This factor is also responsible for the distant heart sounds and the small area of cardiac dullness upon percussion. Blood counts reveal the red blood cells markedly elevated, six or even seven million being recorded when the count has

*Read before the Tuscaloosa County Medical Society, Nov. 10, 1941.

1. Latta, James: Cited by Groeningen, G. H.: Ueber den Shock, Weisbaden, J. F. Bergmann, 1885.

2. Freeman, N. E.: Mechanism and Management of Surgical Shock, Pennsylvania M. J. 42: 1449 (September) 1939.

been normal beforehand. This increase in red cells and hemoglobin is due to the loss of fluid from the blood stream, and such hemoconcentration usually occurs before the fall in blood pressure. This is a valuable aid in diagnosis, particularly in differentiating peripheral circulatory failure from hemorrhage.³

It is most remarkable that this syndrome has been practically the exclusive property of surgery, for, as long ago as 1831, peripheral circulatory failure was described in cholera.⁴ And in 1874 it was recognized in diabetic acidosis and an attempt was made at treatment with saline intravenously.⁵ Apparently the barrier preventing wide recognition of peripheral circulatory failure in medical conditions has been the firm belief of most clinicians in the so-called toxic effect on the myocardium of various and sundry agents. Although there is certainly parenchymatous change in the myocardium in certain infections, particularly diphtheria and typhoid fever, the common type of circulatory failure is peripheral in origin. Toxins of other infectious diseases doubtless have certain deleterious effects on the myocardium, but their chief damage is upon the peripheral circulation. This is not intended as an original observation, for Atchley in 1930, reviewing the frequency of medical shock, reported cases of rattlesnake bite, diabetic acidosis and pneumonia.⁶ He stressed the importance of the recognition and proper treatment of peripheral circulatory failure in such conditions. Similar observations have also been made by several others.^{7, 8, 9} Nevertheless, the subject is of such vital import that it should prove instructive

to review the various causes of peripheral circulatory failure in the field of internal medicine.

These conditions may be classed in four groups. Foremost are the acute infectious diseases, in which peripheral failure is commonplace and often mistakenly regarded as of central origin. Lobar pneumonia and influenzal pneumonia are usually cited as examples, but any acute infection of sufficient severity may give rise to it. The second group would include intoxication of all types. Snakebite has already been referred to. The ingestion of poisons would fall into this group. Overdosage with drugs of the sulfonamide group, or possibly hypersensitivity, has been observed in one case with the production of typical peripheral circulatory failure. Since either the acute infectious disease under treatment or the drug employed in treatment might produce this picture, it is imperative that this be kept in mind.

The third group may be termed circulatory, since it would include coronary occlusion and pulmonary embolism. In this group above all others it is necessary to differentiate between peripheral and central failure to insure the proper management. The fourth group is composed of the endocrine diseases, an anatomic grouping, as there is no similarity in the mode of production of peripheral failure. In this group are Addison's disease and diabetic acidosis. Allergy has not been included since it has not been proven that anaphylactic shock is true peripheral circulatory failure.

The treatment of peripheral circulatory failure in these conditions does not differ from that occurring in the field of surgery. Prompt recognition is the first necessity, since after a period of time the condition becomes irreversible. And recognition is possible before the fall in blood pressure begins, if one keeps the possibility of such an occurrence in mind. Blood flow determinations reveal that peripheral vasoconstriction occurs before the fall in blood pressure. This is represented clinically by cold extremities and an increasing pulse rate. At this point saline solution given by hypodermoclysis or glucose in saline intravenously may prove sufficient. However, if the vicious circle is allowed to progress, fluids without colloid osmotic pressure, i.e., saline or glucose in saline, will not remain within the blood ves-

3. Moon, V. H.: The Occurrence and Clinical Significance of Hemoconcentration, *Ann. Int. Med.* 13: 451 (September) 1939.

4. O'Shaunessy, W. B.: Cited by Atchley, D. W. and Loeb, R. F.: Dehydration and Medical Shock, *Med. Clin. North America*, 17: 1379 (March) 1934.

5. Fagge, C. H.: A Case of Diabetic Coma, Treated with Partial Success by the Injection of a Saline Solution into the Blood, *Guy's Hosp. Rep.* 19: 173, 1874.

6. Atchley, D. W.: Medical Shock, *J. A. M. A.* 95: 385 (August 9) 1930.

7. Fantus, B.: The Therapy of the Cook County Hospital, *J. A. M. A.* 114: 2010 (May 18) 1940.

8. Meyler, L.: Shock, *Ann. Int. Med.* 64: 953 (November) 1939.

9. Sheppe, W. M.: The Control of Circulatory Failure in Diabetic Coma, *West Virginia M. J.* 29: 107 (March) 1933.

sels. When this stage is reached, the administration of plasma, blood or acacia by vein must be regarded as a life-saving measure.

Plasma is ideal when there has been no hemorrhage, as additional erythrocytes are not needed in the presence of the usual hemoconcentration. When plasma is unavailable, blood transfusion is of equal efficacy. In many instances plasma cannot be secured and blood transfusion is impossible. Then a 6 per cent solution of acacia in normal saline solution is a safe substitute. The commercial product is simply prepared for use and reactions are infrequent. In diabetic acidosis with peripheral circulatory failure, acacia, as well as plasma, was used frequently with satisfactory results.¹⁰

Additional treatment is entirely symptomatic and includes the shock position, heat, and warm drinks if there is no vomiting. Drugs are of no value when considered in the light of experimental evidence. The use of vasoconstrictors, such as adrenalin, possibly does a great deal of harm. Part of the deranged physiology consists of vasoconstriction, followed by reflex vasodilatation. This is identically the action of such drugs. Other so-called stimulants might not be so harmful, but there is no proof that they are indicated so long as there is a discrepancy between the volume of the circulating blood and the capacity of the vascular system.

Digitalis is often given in these cases under the erroneous belief that there is congestive failure of central origin. The heart is already working at a greatly increased tempo, and an attempt to stimulate the myocardium is therefore whipping a tired horse. Opiates have not been mentioned, for usually only mild sedation is necessary. When pain is severe, as in acute coronary thrombosis, they are indicated.

The administration of oxygen is indicated in some instances. There is a definite rationale, and it should be employed in selected cases. There have also been reports on the use of adrenal cortical extract. This affects the movement of sodium chloride and water from the tissues back into the blood stream when there is a deficiency, and there is a possibility that there is such a

deficiency in certain types of peripheral circulatory failure. Although there is still much to be learned of this aspect of the problem, it appears that the synthetic preparation, desoxycorticosterone acetate, is ineffective, and it is necessary to use the actual glandular extract.¹¹

In conclusion it should be repeated that peripheral circulatory failure is commonplace in medical cases and that it consists of a deficiency of the blood volume as compared to the capacity of the vascular bed. Successful treatment consists of prompt recognition and measures designed to correct this deficiency.

PSYCHIATRIC CONSIDERATIONS IN OBSTETRICS*

By

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Self concentration, egomania and rabid introspection are the common and invariable psychologic factors in the pregnant woman. This situation confronts the doctor with the choice of being the master psychologist or the master therapist or the master of a bedamned attitude. It is a truism that medical practice is to serve and not disserve, and it is also axiomatic that the practitioner is justified in using the method of management that reasonably commits him or her to the end that justifies the means.

More frequently, than otherwise, pregnancy induces an emotional instability, and when the brakes are not applied by the patient or doctor, or both, a condition that promotes phobia, bubble chasing and other psychic phenomena will ensue and beset the welfare of the woman. Realizing the incontrovertible truth of the foregoing statement, the conclusion is inescapable that the traffic route for psychology in pregnancy must be directed by the one who is not overwhelmed with misgivings, fantasies and emotions—and that person is the medical attendant.

The way of the pregnant woman is hard. Not only does she have dark and disturbing

11. Hartman, F. A.: The Adrenal Hormones in Medical Practice, J. A. M. A. 117: 1405 (October 25) 1941.

*Read before a meeting of the staff of South Highlands Infirmary, Birmingham, October 13, 1941.

10. Schecter, A. E.; Wiesel, B. H., and Cohn, C.: Peripheral Circulatory Failure in Diabetic Acidosis and its Relation to Treatment, Am. J. Med. Sci. 202: 364 (September) 1941.

thoughts arising in her own mind, but she is fairly constantly on the receiving end of disquieting and annoying word pictures of potential dangers to herself and her unborn baby. The pressure of such sympathetic and friendly attentions is calculated to overthrow the most Spartan-like woman, and unless the doctor leads the woman from the Chamber of Horrors he defaults in his duties and permits baneful influences to represent him on the fields of preservation of life, comfort and happiness.

There is no rule-of-thumb to govern the management of psychology in pregnancy. Inasmuch as no two individuals are constituted identically, nervously or temperamentally, then it follows that no two pregnant women can be handled in the same way. It matters not if the doctor is sympathetic or firm or scolding with his patient, the point insisted upon in this discussion is the unquestioned necessity of some action on his part. To follow the intelligent course, time out for a quiz and then a pep talk, should be the contribution of the doctor toward dissipating the mental vagaries of his patient. To analyze and crush the riotous thoughts of the expectant mother is incalculably valuable, for it imparts the impression that cause for effect is understood and subsequent advice becomes more effective. Dismissal of mental worries as being foolish or wild oftentimes offends and, when so approached, the patient holds in reserve the problems that should be a matter of confession to her doctor. Much depends upon the doctor's attitude, willingness and personality. Is he too busy to be delayed by trivial matters? Is he so consumed with austerity as to rebuff confidential discussion? Is he inclined to ridicule? Is he a match, in talk, with the most garrulous woman who might visit him? Is he sufficiently observant to provide artfully an opening for tears just beneath the surface? Has he the courage to invoke a spiritual as well as a medical influence in dispensing psychology? Is he going to follow the easiest way out and prescribe drugs, and more drugs, to counterbalance the effect of mind over matter? Is he going to be the master psychologist or the master therapist or the master don't-give-a-damner? It is clear that proper preparation of the doctor is, and always will be, a pertinent equation in the dispensation of psychology to the pregnant woman.

The prenatal period is the build-up period for the woman in every particular, especially for mental boosting. Appropriate questioning, however subtle it may be, will keep the doctor in full possession of facts pertaining to the patient's well-being. Resulting from the information that follows questions and answers and examination, a mother guidance program can be adopted. Frankness that begets confidence; mutual considerations that beget cooperation; team work that begets coordination; ultimate objectives that beget purposeful action, a bipartisan interest that begets bipartisan understanding—these and many other end results of unrestrained patient-physician relationship are the munificent and bountiful harvest that awaits such a form of practice. It is only human to react favorably to works of kindness, and as kindness is the forerunner of friendliness and even affection, the doctor should seek the respect and love of the pregnant woman. Like a child toward parents, with the knowledge of confidence and devotion, fears are dispelled, anxiety becomes a stranger, and stability of nerves and of mind is an accomplished desideratum. This quotient is not unattainable in any case. They require patience, tolerance and tact, but, alas, these virtues in whole or in part are found wanting in all of us sometimes; nevertheless, human frailties should not deter us from striving for maximum means to protect the would-be mothers from the ravages of morbid psychology. And, in passing, let it be emphatically stated that, while tender ministrations are due the patient, frankness, even to the point of offensiveness, should be the lot of members of the family who are disposed to constantly agitate, through excitement or through morbidity or for the desire of thrill, the home environment. To work at cross purposes is futile—to be superseded by an ignorant or onery layman is intolerable for the doctor.

These knick-knack remarks thus far have presented generalities in the simple psychology of pregnancy. Turning our attention next to pathologic psychology of pregnancy, the psychoses and insanities arrest our attention.

It is not the intent of this paper to delve into the intricacies of abnormal mental disturbances in pregnancy. It is safe to say that evidently the etiology of psychosis is little understood; otherwise, obstetricians

would not experience a shock when the condition develops. Infections and toxemias are contributing factors, but the writer candidly believes that there is no such entity as obstetric insanity, per se. A maternal organism, given the same emotional and physical strain by some other condition, would collapse under the circumstances. The human mechanism is complex and the cause of its eerie behavior is not always revealed, especially that of the mind. There are the super-sensitive and the callous, the aggressive and the timid, the positive and the indecisive, the courageous and the coward, the heroic and the slave. All of these personalities are geared to run an even tenor of life under normal conditions; but, let any major conflict, whether it be psychic, disease or otherwise, attack them, a resultant blowout would not be surprising. Admittedly, pregnancy may provide the additional burden to super-induce a psychosis, but so might a number of other events produce the same results. Based upon such reasoning, the writer feels that the interruption of pregnancy does not aid in the treatment of psychosis. This position is sustained by the observation of women who develop insanity during the puerperium and remain in statu quo for weeks and months thereafter. If an abortion cures psychosis pronto, then the woman was a clever actress or the doctor was the easy victim of her cunning and deceitful purpose.

Perhaps the greatest controversy of the subject revolves around the advice to be given married couples, or those contemplating marriage, wherein the man or the woman has suffered a mental breakdown. There is no disposition on the part of the speaker to be specific on this point, other than to remark that adjustments to married life, economic, social and personality, should be completed before entering into family raising, and that if, in this trial and error period, a pregnancy should ensue, permit it to run its course. An eminent Alabama psychiatrist stated to the writer that a child born to a couple where the husband or wife had previously been insane had a better chance to be smarter and brighter than other children.

This interesting subject, with its many ramifications, could be prolonged and yet not crystallize a unified opinion. It has been brought to you (1) because it seldom appears on a medical program; (2) because it

is met daily in routine obstetric work; (3) to emphasize the importance of exercising a naive, if not a scientific, psychology in maternity service; and (4) to leave for your meditation this thought: that if there is a truer measure of a man than by what he does, then it must be by what he gives. It is a plea to give wholesome mental food throughout pregnancy, labor and the puerperium.

1117 South 22nd Street

THE TREATMENT OF EYESTRAIN WITH VITAMIN B COMPLEX

A PRELIMINARY REPORT

By

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It has been the author's pleasure to be the Medical Director of the public schools in this community for the past four years. The pupils are given a limited physical examination, and the eyes of those in the fourth to the eighth grades are examined with the Snellen chart. An amazing number of school children who suffer from eyestrain have been encountered. In the school year 1938-1939, 447 cases were observed in the fourth, fifth, sixth and seventh grades. The total enrollment from the first grade through the twelfth grade was about 8,000.

Pupils cannot do their best work if the eyes are strained while reading, and with this in mind it was possible to interest the local Community Chest in buying glasses for some of the worst cases after they had been examined by an ophthalmologist.

During the examinations the following year it was noted that a number of pupils had stopped wearing their glasses, stating that they did not help, or that they helped for a short time only. A few complained that glasses accentuated their symptoms. The majority of the children were benefited, however, and were still wearing their lenses.

On this basis it was conjectured that another factor besides lens correction was involved. It was also noticed that the majority of severe cases of eyestrain were in girls, most of whom were underweight, tall and thin. Rarely did one encounter a fat

child with symptoms of eyestrain. Consideration was therefore given to nutritional deficiency as a possible etiologic factor.

SYMPTOMS OF EYESTRAIN

Patients with severe eyestrain complain of frontal headaches, and burning and hurting of the eyes accompanied by lacrimation when they read. In some, dizziness is present and words seem to "run together."

EXPERIMENT

Realizing that one case, a child seen first two years ago (Case 1), did not prove that all instances of eyestrain were the result of avitaminosis, it was decided to try vitamin therapy on 25 patients in the following way: All individuals were given a complete physical examination to rule out any other condition that might be causative in producing the symptoms. The eyes were examined by Dr. T. C. Naugle, an ophthalmologist. The patients included in this study were those in which both of us agreed that eyestrain only was present. The children were given four capsules of vitamin B complex* daily for four days (16 capsules total). It was necessary to give 32 capsules in a few instances before the symptoms were completely relieved.

If the symptoms of eyestrain were entirely relieved, the children were told to wait until the symptoms returned and then to come back, at which time they were given a vitamin chart showing foods high in vitamin B complex. The patients were seen at weekly intervals thereafter until the symptoms were alleviated.

REVIEW OF THE LITERATURE

There are no reports in the literature concerning the treatment of eyestrain with the vitamin B complex. There are many articles regarding therapy in this condition with vitamin A. Spies, Vilter and Ashe¹ have mentioned that many cases with eye symptoms have cleared up after administration of riboflavin. "A lesion of the eyes characterized by bulbar conjunctivitis, lacrimation, burning of the eyes and failing vision has responded in some instances after the same treatment (riboflavin)."

*The vitamin B preparation used was Betalin Compound (Vitamins B₁ and B₂ Complex, Lilly).

1. Spies, Tom D.; Vilter, Richard W., and Ashe, William F.: Pellagra, Beriberi and Riboflavin Deficiencies in Human Beings, J. A. M. A., 113: 931, 1939.

Spies² treated twenty children with relief of symptoms of eyestrain after the use of vitamin A in the form of carotene and oleum percomorphum.

CASE REPORTS

Case 1—F. B., 12 years of age. This patient was first seen on March 30, 1939. She complained of having had severe headaches daily for the past two years, which became worse after reading, and still more intense during school hours and at night while studying. The headaches were frontal and she was exhausted at night. Her eyes hurt and burned when she was reading. Lacrimation was present. She had been vomiting after every meal for two weeks.

Physical examination at this time revealed nothing definite. X-rays of the skull were made for evidence of brain tumor, which were negative. A few drops of cerebrospinal fluid were withdrawn for examination, with negative findings. A diagnosis of eyestrain was made and the patient was referred to an ophthalmologist for additional examination. She was given glasses at this time. Her headaches ceased until August 1940 when they returned on starting back to school. Therapy with vitamin B complex was then begun. About a month later (September 13, 1940) the child's mother brought her back, saying that she wanted some more of the medicine as it had stopped the headaches. She was given a small amount of B complex and a vitamin diet chart showing the foods richest in the B complex. She has been free of headaches since September without the use of glasses.

Case 2—H. N., 13 years of age, was seen on October 5, 1940. This patient, a girl, had had headaches, lacrimation, and hurting and burning of the eyes for the past four years. She was given four capsules of Betalin Compound daily for four days. Five days after initiation of therapy she returned to the office stating that she was entirely free of all symptoms. One month later the symptoms had returned. A vitamin chart as previously described was given with instructions and within two weeks the symptoms had cleared up again and have remained so.

Case 3—M. B., 13 years of age, was seen on November 5, 1940. She had had frontal

2. Spies, Tom D.: A Note on the Ocular Symptoms Occurring from Malnutrition in Human Beings, Am. J. M. Sc., 198: 40, 1939.

headaches, lacrimation, and hurting and burning of the eyes for two years, especially noticeable after reading. Her appetite was very poor. She was given four capsules of Betalin Compound daily for four days. On November 10, 1940 all symptoms had improved slightly. She was given another series of treatments and on November 15, 1940 she was almost entirely free of symptoms. In about three weeks she was again having trouble with her eyes. At this time a vitamin chart with instructions was given and she gradually cleared up and has been free since except when she has neglected her diet.

Case 4—M. T., 13 years of age, was seen on March 8, 1941. She has had lacrimation continuously since she was four or five years of age. Frontal headaches have been severe and continuous for four years and are accentuated after reading. She has complained of her eyes hurting and burning after reading, for four or five years. She was given 16 capsules of Betalin Compound over a period of four days.

The headaches were relieved entirely by March 15, but some burning and lacrimation persisted. The latter symptoms were relieved with another course of the B complex.

By April 9 all symptoms had returned. She was given a vitamin diet chart but due to the economic status of the family the patient has not been able to adhere strictly to the diet. However, she is much better than she has been for the past four to five years.

COMMENTS

In a series of 25 similar cases, 20 were completely relieved after courses of 16 to 32 capsules of vitamin B complex. Five cases were markedly improved and possibly would have been completely relieved if the vitamin B complex had been given for a longer period of time, since defective absorption of vitamins is known to occur in some cases.

While this series of cases is small, the results received appear to indicate that many cases of eyestrain may have their etiology in a deficiency of the vitamin B complex. Patients with eyestrain should be studied for evidence of avitaminosis before glasses are advised.

All the cases in this series were children; however, the same possibilities may apply to adults.

SUMMARY AND CONCLUSIONS

A series of 25 cases of eyestrain treated with vitamin B complex are reported. Twenty cases were completely relieved of all symptoms and five cases were markedly improved.

All cases of eyestrain in children who have no refractive error should be given vitamin B complex and a high vitamin diet before glasses are advised.

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LIPOID PNEUMONITIS*

By

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And

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Montgomery, Alabama

Lipoid pneumonia was demonstrated experimentally as early as 1920, but only in recent years, with the number of cases steadily increasing, has it been realized that lipoid disease of the lungs occurs often enough to make it a relatively important pathologic, roentgenologic and clinical entity. Between 1934 and 1938 at Bellevue Hospital, Graef and Irving¹ encountered 22 cases of lipoid pneumonia in infants and adults. In 1939, Bromer et al.² presented a paper which was based on an analysis of 27 cases observed at the Children's Hospital of Philadelphia. Twelve of these were found in a series of 137 consecutive autopsies. In 1940 Kirklin³ collected no less than 72 cases from literature, many of which have been reported in the past six years.

Although in the last several years each of us has had opportunity to study many case histories of lipoid pneumonitis, the percentage of fatalities indicates that these have not yet proved sufficient to make us as cautious and watchful as is necessary for effec-

*From St. Margaret's Hospital, Montgomery.

†Captain, Medical Corps, U. S. Army, on duty at Camp Shelby, Miss.

1. Graef, Irving: Studies in Lipid Pneumonia. I. Lipid Pneumonia Due to Cod Liver Oil. II. Lipid Pneumonia Due to Liquid Petrolatum, Arch. Path. 28: 613 (November) 1939.

2. Bromer, Ralph S., and Wolman, Irving J.: Lipoid Pneumonia in Infants and Children, Radiology, 32:1 (January) 1939.

3. Kirklin, B. R.: Section on Roentgenology, The Mayo Clinic, Rochester, Minnesota.

tive prevention. We now add to this number a case of fatal lipoid pneumonia in a male infant.

CASE HISTORY

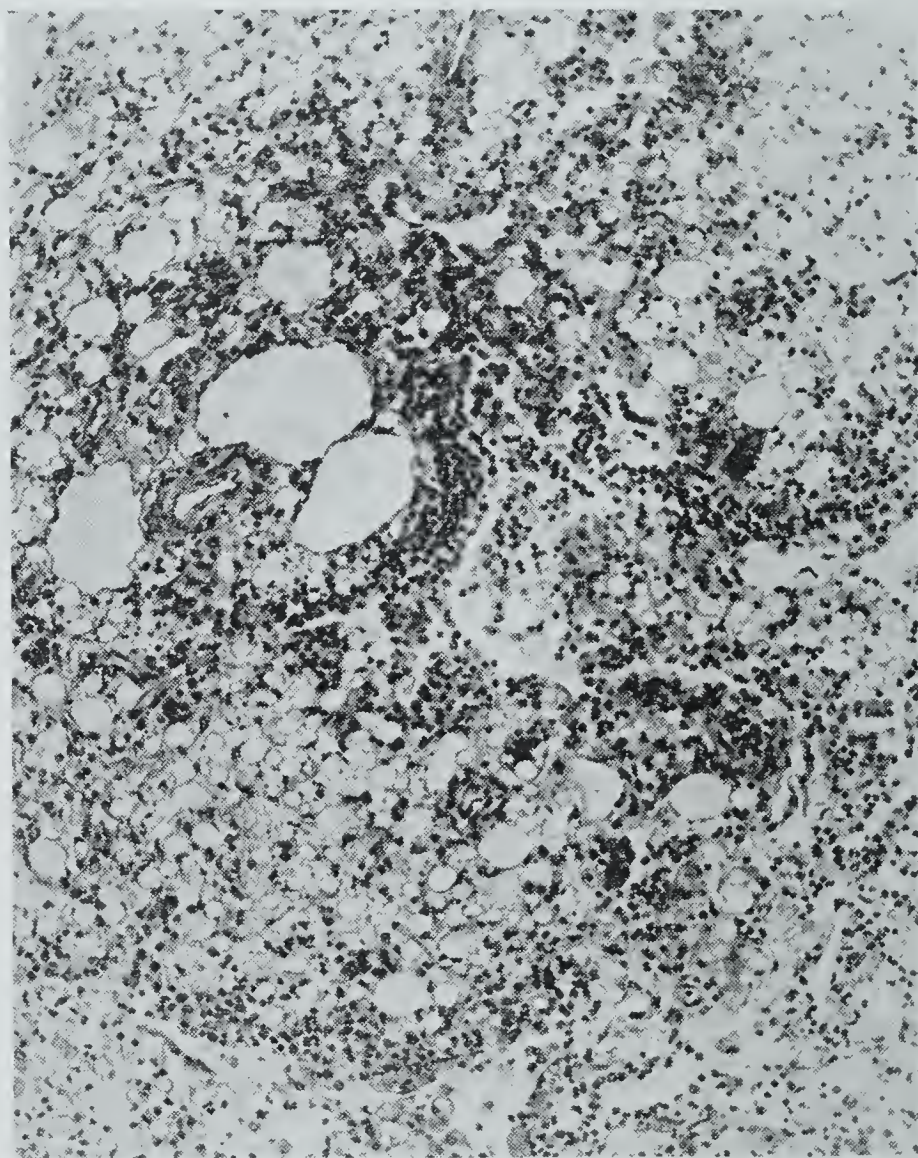
The history was obtained from the mother. She stated that since birth the child has had difficulty in retaining food, vomiting upon the least provocation. She further stated that there was almost immediate regurgitation of a meal without any apparent cause. The child was given one tablespoonful of mineral oil daily for constipation. Usually a portion of the oil was vomited. Anti-spasmodic drugs and x-ray therapy were administered in an attempt to relieve the pyloric spasm, but were of little avail. Chest and gastro-intestinal x-ray studies were made and no pathology found. The patient was first seen by one of us on February 28, 1939. Physical examination revealed a poorly nourished, white, male child, about 18 months old, weighing 22 pounds. Rectal temperature was 99°. The head was normal in size with both fontanelles closed. The eyes and pupils were normal. The nose was normal. The tonsils were quite enlarged, and the throat was somewhat reddened. The anterior cervical glands were palpable. The chest showed a marked deformity consisting of a very protruberant sternum. Except for harsh breath sounds on both sides there were no apparent abnormalities on palpation, auscultation or percussion. The heart sounds were normal. The abdomen was protuberant, and the umbilicus prominent. The liver was palpable and extended about 3 centimeters below the costal margin. No masses were palpable. On examination it was noted that there was marked clubbing of the fingers and toes with a definite cyanotic tinge to the nails. Laboratory findings were as follows: hemoglobin 80 per cent; red blood cells 4,800,000; white blood cells 9,500; neutrophils 61 per cent; and lymphocytes 39 per cent. Repeated x-ray examinations showed a chronic process in the chest suggestive of lipoid pneumonitis or tuberculosis.

On February 28, 1939, after carefully studying the history, physical and x-ray findings on this child, all previous therapy was discontinued and an adequate diet with vitamin therapy prescribed. Two months later the child had gained 2½ pounds, with a parallel cessation of vomiting. The child

was seen at regular intervals and continued to improve slowly.

On June 7th, 1940, the child was admitted to the hospital in a critical condition. He was markedly cyanotic and bronchial breathing was noted over the right chest from the axilla to the sixth interspace. The child grew rapidly and progressively worse and expired June 12, 1940.

Necropsy: The body was that of a well developed and well nourished white male infant about 3 years of age. The pupils were round and equal; oral hygiene was good, and there were no enlarged palpable cervical glands. There was a marked protuberance of the sternum, and moderate abdominal distention. The fingers and toes were markedly clubbed. The peritoneal cavity was not unusual. On opening the pleural cavity the membranes were moist and glistening, and the lungs completely filled the cavities. The lungs had a mottled pink and red color and



Microscopic appearance of the lung showing many phagocytes containing oil globules, and oil globules free in the alveoli spaces.

were of a doughy consistency with numerous small palpable nodules in the lower lobes of both lungs. In the left upper lobe at the periphery there was a firm area 1½ centimeters in diameter. On section the lungs had a yellowish-red color with nu-

merous dark fibrous areas. On pressure, large quantities of yellowish oily fluid exuded from the cut surfaces. In the left lung there was an area of calcification measuring $1\frac{1}{2}$ centimeters in diameter. Examination of the fluid from the lungs showed many oil globules of varying sizes. The pericardium was markedly increased in size. The heart was dark red, firm, but enlarged. On section, the myocardium of the right and left ventricles was hypertrophied and the cavities rounded and dilated. The right auricle and ventricle were so markedly hypertrophied and dilated that they overlapped the left auricle and rendered identification of the pulmonary artery difficult. The endocardium was smooth. The aortic, mitral and pulmonary valves were thin and intact. There was no evidence of congenital anomalies.

Anatomic diagnosis: 1. Lipoid pneumonia, bilateral, with a calcified area in the upper left lobe; 2. hypertrophy of the right side of the heart, with congestive failure; and 3. chronic passive congestion of the liver.

Microscopic examination: Sections taken through the myocardium showed fragmentation of the muscle fibers and marked hypertrophy. Sections taken through the lungs showed an area of calcification and a marked infiltration of plasma cells, lymphocytes and neutrophils into the parenchyma of the lungs. There was moderate diffuse fibrosis. There were many phagocytes containing oil droplets, and some of the oil was free in the alveoli spaces. Sections taken through the liver showed congestion of the central veins and atrophy of the adjacent cells.

DISCUSSION

The clinical diagnosis of lipoid pneumonitis is not easily made as there are no accurate diagnostic criteria. The history is most helpful; and in unexplained respiratory symptoms in infants and children one should inquire repeatedly concerning the administration of oil, either orally or via nasopharynx. The physical findings are of little help. The findings in the lungs are usually negative or there is only slight evidence of consolidation. In patients having extensive involvement x-rays of the chest may furnish a diagnosis. The criterion of the roentgen diagnosis is based upon the location of the lesions. These are in the peri-

hilar region posteriorly, and to a greater degree on the right than on the left. To confirm a diagnosis of lipoid pneumonia, the sputum should be examined for oil droplets. Among the fats and oils that are either clinically or experimentally productive of lipoid pneumonitis are liquid petrolatum, chaulmoogra oil, olive oil, milk fat, cod liver oil, egg yolk and vaseline. It seems reasonable to assume, therefore, that almost any lipoid, whether animal, mineral or vegetable, when aspirated in sufficient amounts, may give rise to this disease. Prevention is dependent upon the physician in most instances.

CONCLUSIONS

A fatal case of lipoid pneumonia in a white male infant is recorded with physical, clinical and posthumous findings. Mineral oil prescribed for constipation was frequently regurgitated and aspirated into the lungs by the infant. This was the etiology of this case of fatal lipoid pneumonia. The immediate cause of death was hypertrophy of the heart, especially on the right side, with congestive failure due to lesions in the lung. Caution in administering and in prescribing lipoids is the preventive measure.

THE EYE*

WITH PARTICULAR REFERENCE TO ABNORMALITIES

By

J. W. ALLEN, M. D.

Dothan, Alabama

I shall endeavor in this paper to follow a simple outline I have prepared, and there will be two parts: first, a consideration of normal eyes; and, second, one of abnormal eyes.

A normal eye is one that is of natural length with no opacities or other hindrance to the passage and refraction of light rays, and with a healthy nerve for these rays of light to be focused upon. The principal parts of the organ are the conjunctiva, the cornea and sclera, the iris with its pupil, the lens and the retina; and the anterior and posterior chambers. Rays of light enter the cornea, pass through the aqueous humor, through the pupil and lens, and on through the vitreous to be brought to a sharp focus upon the nerve (the retina) which is spread

*Read before the Houston County Medical Society, August 1, 1941.

out upon most of the posterior part of the eye. If the eye is shorter than normal, the rays of light will have their principal focus behind the retina, and the eye will be farsighted or hyperopic. Conversely, if the eye is too long, then the rays will come to a focus in front of the retina, and the eye is nearsighted or myopic.

In hyperopia, magnification is used in eye glasses to focus these rays shorter; that is, upon the retina which is abnormally close to the lens. In myopia, reducing or concave lenses are used to bring the light rays to a focus farther back upon the retina. Oftentimes, though, these abnormalities are complicated by astigmatism. This condition is due to an irregular curvature of the refractive surfaces of the eye, usually the cornea. I believe the best way to get an idea of astigmatism is to consider the cornea a portion of a sphere, altered in such way that a ray of light is not sharply focused on the retina but is spread over a more or less diffuse area.

In measuring an eye for glasses, homatropine or atropine is usually used, depending on the age of the patient. By the instillation of these drugs, the effort of the eyeball can be overcome, and the kind and degree of visual error determined. When the exact length, etc., of the eye has been found, then the strength of the lens needed can be computed, making allowances for accommodation and vision. In an eye that does not see because it has allowed its fellow to do all the work, a stronger glass is put over the good eye to stimulate the poor one to effort. This is seen in cross-eyed people, and is done in children because adults will not tolerate it. They prefer to be cross-eyed. Probably children would, too, but they do what their parents want them to do.

The eye, then, is essentially a camera. Light rays are focused upon the film, or retina, where they are converted into nerve impulses and through the optic nerve are taken back to the brain to be interpreted as familiar objects. Since all objects are not the same distance from the eye, a distinct picture is had by the process of accommodation, which takes place in the lens. This structure is able to become thick or thin as needed, thus enabling one to see at eight or ten inches or many yards off. This ability, unfortunately, is practically lost in advancing years, usually beginning about the age of forty. This is called presbyopia, and is

why reading glasses are needed about that age.

The diseases of the eyes can roughly be divided into those of the lids and those of the ball itself. Lids may be turned out (ectropion) or in (entropion). In the latter condition, the lashes may scratch the cornea and give rise to an inflammatory process. There may also be paralysis of such degree that the lids do not cover the cornea properly, leading to abnormal dryness and ulcer formation. Chronic diseases of the lids seem to be due often to other abnormalities of the system. In my opinion, chronic constipation with its train of symptoms gives more lid trouble than any other. The so-called granulated eyelids are probably a consequence of this condition. There also is the very severe disease called trachoma in which nodules of scar tissue form under the lids and by their irritation produce very severe opacities.

The most important criteria in determining whether it is the eye or the lid that is affected are loss of vision and the amount of loss, and whether the pain is in the eyeball or in the lid. Pain is not always present. This is frequently true in syphilitic iritis and in uveitis. Diseases of the eye itself cannot be classified except by the structure that is diseased, namely, the cornea, the sclera, the retina and the uveal tract. Diseases of the latter cause severe opacities to form in the vitreous body and so interfere greatly with vision. Diseases of the nerve (retina) bring about destruction of it and consequent loss of vision which is permanent. Occasionally, hemorrhages occur in the fibers of the nerve but these usually clear up and leave no trace of their presence. These hemorrhagic areas are seen only with the ophthalmoscope, as are likewise other portions of the eyeball posteriorly.

The eye troubles most frequently seen by the general practitioner are of the lids, and most of these are due to a derangement of the general system, hookworm disease being nearly first in importance, and errors in diet second. The important point is that diseased lids are not due to eyestrain usually, as so many people believe. The need for glasses is a secondary consideration in most all affections of the eyes and lids. Frequently otherwise normal eyes struggle to see through glasses because of granulated eyelids. However, many patients think they

are being benefited by wearing glasses. They (glasses) are, in a way, a medicine, and medicines usually do what they are told to do.

Foreign bodies in the eye often find their way to the general practitioner who removes them. Ulcers of the cornea sometimes develop and are recognized readily because of the pain, photophobia, lacrimation and redness of the eye. A condition of the cornea producing practically the same symptoms and seen often is due to a toxin from some focus of infection, as from an abscessed tooth, diseased tonsils, malaria, etc.

Glaucoma is a disease characterized by increased tension in the eye, and may be sudden or insidious in onset. When sudden in onset, the pain is acute, robust men crying like babies when the disease is at its height. The disease is brought about by the failure of lymph to drain from the eye as fast as it comes into it. This constant flow of lymph into the eye takes place, though we do not know exactly through what structure, and drains out at the angle created by the junction of the iris and sclero-corneal junction. Because of this anatomic fact, atropine is not used in glaucoma since the iris is drawn back into this very angle and consequently would further block the drainage system. Pilocarpine hydrochloride solution in weak dilution is used, this to keep the iris drawn around a small pupil. If this does not control the disease a hole is made at the base of the iris near or just at its junction. This may be accomplished by one of two popular operations, the iridectomy (in which a portion of the iris is removed) and the trephine, in which a small button of sclero-corneal tissue is removed. The latter does better in chronic glaucoma and the former is used mostly for the acute stages.

Cataract is a simple opacity of a normally clear lens. Its onset is insidious, unless due to trauma, and its cause is unknown. Treatment is operative removal, and there are as many different techniques as there are theories as to the cause. The object of all operative work is to produce a clear pupil for the light rays to travel back to be focused once again upon the retina. With the lens removed, it is necessary to put its equivalent in glasses situated in front of the eye.

"It is especially important to avoid exploratory operation in a jaundiced patient because of the greater risk entailed as compared with the nonicteric individual."

Treatment of Wounds—The successful practitioner realizes the importance of a proper mixture of the science and the art of medicine. I sometimes think that nowhere may the two be more neatly blended than in the treatment of those small lacerations which constitute the majority of wounds. The patient, often a small child, has just been hurt. Short moments ago he was well and happily intact. Suddenly the thing happens and he is aware of pain. He sees a gaping rent in his integument, through which pours the bright red stream of arterial hemorrhage. He is all undone, and he expects the worst. Shall we add to his misery, in obedience to the science of yesterday, by swabbing the wound with iodine or other strong medicine? Or shall we allay his fears by gentle cleansing with saline or some equally mild equivalent—good science, 1941 variety—and also good art? There is much to be said here for 5 per cent mercurochrome. It is relatively painless and in color brilliantly impressive enough to satisfy the highest requirements of the art; it does a little good and no harm, and so may be considered scientifically adequate.

After the urgent hemorrhage is checked and the surrounding skin has been cleansed and prepared, the matter of anesthesia presents itself. Most extensive fresh wounds are best treated under general anesthesia, but in the smaller cuts local anesthesia is the method of choice. A little novocaine squirted into the wound alleviates the pain of preliminary cleansing, after which the wound may be safely infiltrated. A small, practical point that I have found useful and quite harmless is that of beginning the injection of the anesthetic into the wound surfaces rather than into the surrounding skin. A moment's reflection will convince anyone that the needle introduced through exposed subcutaneous tissue is less painful than one introduced through the skin. A minor consideration this, but it spares the patient additional pain, inspires his confidence in the doctor, and is usually appreciated. More thorough cleansing and debridement can now be carried out painlessly.

The wound is now ready for closure with such sutures as are necessary for careful apposition of its surfaces. Gibson a century ago used leather ligatures for this purpose, noting that occasionally healing took place without suppuration. Halsted and his followers used fine silk in clean wounds. It is fine, strong and non-irritating, and permits of delicate technique. In recent years the manufacturers of catgut have made available chromic of small caliber, 000 to 00000, which is excellent suture material. It has been said that chromic 0 is as strong as any tissue in the body that it may be called on to hold. It has been proved that the finer chromic gut remains intact longer and produces far less reaction than larger and doubled sizes.

After a wound has been closed with sutures that are not too tight, healing is greatly facilitated by putting the part at rest with a proper pressure dressing. A cut finger is best splinted. Motion causes bruising, separation of wound surfaces, and delayed repair. —*Thomason, Texas State J. Med., Jan. '42.*

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POSTGRADUATE FELLOWSHIPS

The Commonwealth Fund is again making available fellowships for postgraduate study to members of the Association. As in the past, the work will be given at Vanderbilt University Medical School, Nashville, beginning about the middle of June and ending in the middle of August. The fellowships are of one month's duration. During the first month courses in (a) internal medicine and (b) surgical diagnosis will be given. During the second month courses in (a) obstetrics and gynecology and (b) pediatrics will be available. An applicant may, therefore, take any one of the four courses. If he elects to take two courses, he must take either (a) or (b) during the first month and (a) or (b) during the second.

The fellowships carry a stipend of \$250 for each month awarded, plus a refund of tuition and actual travel expense to and from Nashville.

Applicants must be graduates of an accredited medical school who are doing general practice in the smaller communities of the state, members of the Association and not more than fifty years of age. Preference will be given physicians who have been in practice at least five years.

Interested physicians should make application directly to the Commonwealth Fund,

*Deceased.

41 East 57th Street, New York City for the necessary information forms. It is desired that all applications be in the hands of the Fund by March 1st.

CARDIAC NEUROSIS AND HEART DISEASE

"It is not an uncommon experience to observe patients afflicted with both structural disease of the heart and cardiac neurosis. With few exceptions their disability is chiefly the result of the neurosis. It is of great importance that the physician promptly recognize this dual affair so that a constructive approach can be made to abolish the neurosis. The patient who has lesser degrees of heart disease is the one most likely to exhibit neurosis although many exceptions to this statement occur."

"The great prevalence of heart disease today, together with a remarkable interest of the laity in disease, perhaps overemphatic publicity, the stress and tempo of modern life and the increasing uncertainties confronting the world today are all important causative factors. The American public has become heart conscious and to a considerable degree lives under the constant fear of heart disease."

The above are the opening lines of the brief but very excellent discussion of this subject by Willius.¹ The Rochester clinician goes on to tell us that "the heart under stimulation reacts by increasing its activity. Thus, under abnormal nervous tension, it may respond by acceleration, by more forceful contraction or by minor disturbances in rhythm, notably by the occurrence of premature contractions, or all three responses may occur simultaneously. The persistent or recurrent display of heart consciousness is in itself capable of creating the impression and even conviction on the part of the patient that the heart is impaired seriously. When this occurs in a case of known cardiac impairment, a difficult problem confronts the physician. Both the science and the art of medicine must be utilized to the highest degree. The science of medicine enables the physician to make a thorough appraisal of the cardiovascular system and the results of this appraisal frequently will enable the

1. Willius, F. A.: Cardiac Neurosis and Heart Disease, Proc. Staff Meet. Mayo Clin. 16: 575 (Sept. 3) 1941.

examiner to discover a lesion of less magnitude than the patient feared which has not impaired or does not immediately threaten the function of the heart. The art of medicine then must be applied in such a manner that the patient realizes that the presenting symptoms of increased cardiac irritability are not the result of the disease, but rather of fear, anxiety and uncertainty which have conspired to create the cardiac neurosis."

For some years past the literature has contained many papers dealing with the difficult problem of differentiating between functional and organic cardiac disturbances. Many of these have been excellent, but, oftentimes, the authors have been inclined to dwell at length upon the various aspects of the two types while overlooking or minimizing the fact that both forms may plague the patient either simultaneously or at different times. It is well that Willius has called attention to this condition because it is so frequently overlooked and, coming from so eminent an investigator, his counsel should carry much weight.

Cardiology, like most of medicine, continues to improve and our knowledge of it to expand. Time was when almost any murmur was held to be a certain sign of a seriously damaged heart, but today we know better. We have come to realize that an extrasystole does not invariably mean "chronic myocarditis." And it is not unreasonable to assume that we will learn much more about the interpretation of electrocardiograms, especially those which appear to be normal or doubtful in the middle-aged. Progress will continue to be made, but meanwhile practitioners will do well to bear in mind the concluding paragraph of Willius: "It is therefore very important constantly to be aware of the fact that structural impairment of an organ may be complicated by a superimposed neurosis, and under such circumstances not to attribute any and all symptoms to the existent disease. Failure on the part of the physician clearly to separate the genuine from the spurious manifestations frequently leads to long periods of useless and unnecessary invalidism."

In conjunction with this abstract of Willius' article, readers will want to refer again to the article on functional cardiac disorders that was printed in the August 1941 number of this Journal.

THE FIGHT AGAINST CANCER

The real existence of the greatest national emergency in our history is now recognized by every intelligent American citizen. Along with the vast demands made upon our courage and patience by this situation is a keener realization of our responsibilities to care for the lives and happiness of those unfortunate people who find themselves in personal physical adversity.

The greatest of all these menaces to the health, happiness and life of our people is cancer. The quality of its threat and of its power as a killer is unique. War itself may take a larger toll of Americans in the years to come. Various heart conditions of cardiac disease may do the same thing. Neither, however, will so silently, so grimly, and with such evil power to disintegrate moral stamina, invade the lives and families of our people. We must not lose sight of this fact. No matter what our emergency obligations may be, we must not forget this great continuing enemy of mankind.

Fear, ignorance and delay are the three allies of cancer which lead to disaster and death. They can be overcome by knowledge of the early signs and symptoms of the disease and of the methods of fighting it. The American Society for the Control of Cancer throughout the country has for years been engaged in this battle. It is making progress. It must not lose the gains made, and indeed must drive ahead. The defeat of fear, ignorance and delay lies in the adoption of an intelligent and controlled point of view by each individual. These same qualities will contribute to his or her success in fighting whatever the national emergency may present.

The fight against cancer is an ally in the fight against our foreign enemies. The methods are much the same. The qualities appealed to in the individual are similar. The complete victory spoken of by the President in discussing the international situation is just as applicable to our fight against cancer. Both victories can be gained. We must recognize how closely they may be related to one another and must act speedily, courageously, and untiringly to make both possible.

The Association's Committee on Cancer Control bespeaks the cooperation of the profession in the fight against the disease.

Medical Preparedness

LET THE PROFESSION TAKE NOTICE

REGARDING ENROLLMENT FOR SERVICE IN THE ARMY AND NAVY

The Secretary of the Association is in receipt of the following telegram from the Secretary of the American Medical Association:

I have been officially informed that because of constantly increasing demands on The Procurement and Assignment Service in Washington and because of the growing needs of the Army and Navy for personnel it has become necessary for a new form to replace the form that recently appeared in the Journal of the American Medical Association and that it is expected that the new form will be ready for release within the very near future. It is therefore requested that the form which appeared in the American Medical Association Journal and which was reproduced by official agencies of state associations in a number of states be discontinued. It is my understanding that complete information concerning the new form will soon be available. An expression of grateful appreciation of the splendid cooperation and helpful kindnesses of state and county committees and state secretaries is hereby extended in behalf of the American Medical Association and its Committee on Medical Preparedness. The executive officer of The Procurement and Assignment Service has today expressed to me similar appreciation on behalf of his office and of The Procurement and Assignment Service.

Signed: Olin West

RECOMMENDATIONS TO ALL PHYSICIANS WITH REFERENCE TO THE NATIONAL EMERGENCY

I. MEDICAL STUDENTS

A. All students holding letters of acceptance from the dean for admission to medical colleges and freshmen and sophomores of good academic standing in medical colleges should present letters or have letters presented for them by their deans to their local boards of the Selective Service System. This step is necessary in order to be considered for deferment in Class II-A as a medical student. If local boards classify such students

in Class I-A, they should immediately notify their deans and, if necessary, exercise their rights of appeal to the Board of Appeals. If, after exhausting such rights of appeal, further consideration is necessary, request for further appeal may be made to the State Director and if necessary to the National Director of the Selective Service System. These officers have the power to take appeals to the President.

B. Those junior and senior students who are disqualified physically for commissions are to be recommended for deferment to local boards by their deans. These students should enroll with the Procurement and Assignment Service for other assignment.

C. All junior and senior students in good standing in medical schools, who have not done so, should apply immediately for commission in the Army or the Navy. This commission is in the grade of Second Lieutenant, Medical Administrative Corps of the Army of the United States, or Ensign H. V. (P) of the United States Navy Reserve, the choice as to Army or Navy being entirely voluntary. Applications for commission in the Army should be made to the Corps Area Surgeon of the Corps Area in which the applicant resides and applications for commission in the Navy should be made to the Commandant of the Naval District in which the applicant resides. Medical R. O. T. C. students should continue as before with a view of obtaining commissions as First Lieutenants, Medical Corps, upon graduation. Students who hold commissions, while the commissions are in force, come under the jurisdiction of the Army and Navy authorities and are not subject to induction under the Selective Service Act. The Army and Navy authorities will defer calling these officers to active duty until they have completed their medical education and at least 12 months of internship.

II. RECENT GRADUATES

Upon successful completion of the medical college course, every individual holding commission as a Second Lieutenant, Medical Administrative Corps, Army of the United States, should make immediate application to the Adjutant General, United States Army, Washington, D. C., for appointment as First Lieutenant, Medical Corps, Army of the United States. Every individual holding commission as Ensign H. V. (P), U. S.

Navy Reserve, should make immediate application to the Commandant of his Naval District for commission as Lieutenant (J. G.) Medical Corps Reserve, U. S. Navy. If appointment is desired in the grade of Lieutenant, (J. G.) in the regular Medical Corps of the U. S. Navy, application should be made to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

III. TWELVE MONTHS' INTERNES

All internes should apply for a commission as First Lieutenant, Medical Corps, Army of the United States, or as Lieutenant (J. G.), United States Navy or Navy Reserve. Upon completion of 12 months' internship, except in rare instances where the necessity of continuation as a member of the staff or as a resident can be defended by the institution, all who are physically fit may be required to enter military service. Those commissioned may then expect to enter military service in their professional capacity as medical officers; those who failed to apply for commission are liable for military service under the Selective Service Acts.

IV. HOSPITAL STAFF MEMBERS

Internes with more than 12 months of internship, assistant residents, fellows, residents, junior staff members, and staff members under the age of 45 fall within the provisions of the Selective Service Acts which provide that all men between the ages of 20 and 45 are liable for military service. All such men holding Army commissions are subject to call at any time and only *temporary deferment* is possible, upon approval of the application made by the institution to the Adjutant General of the United States Army certifying that the individual is temporarily indispensable. All such men holding Naval Reserve commissions are subject to call at any time at the discretion of the Secretary of the Navy. Temporary deferments may be granted only upon approval of applications made to the Surgeon General of the Navy.

All men in this category who do not hold commissions should enroll with the Procurement and Assignment Service. The Procurement and Assignment Service under the Executive Order of the President is charged with the proper distribution of medical personnel for military, governmental, industrial, and civil agencies of the entire coun-

try. All those so enrolled whose services have not been established as essential in their present capacities will be certified as available to the Army, Navy, governmental, industrial, or civil agencies requiring their services for the duration of the war.

V. ALL PHYSICIANS UNDER FORTY-FIVE

All male physicians in this category are liable for military service and those who do not hold commissions are subject to induction under the Selective Service Acts. In order that their service may be utilized in a professional capacity as medical officers, they should be made available for service when needed. Wherever possible, their present positions in civil life should be filled or provisions made for filling their positions, by those who are (a) over 45, (b) physicians under 45 who are physically disqualified for military service, (c) women physicians, and (d) instructors and those engaged in research who do not possess an M. D. degree whose utilization would make available a physician for military service.

Every physician in this age group will be asked to enroll at an early date with the Procurement and Assignment Service. He will be certified for a position commensurate with his professional training and experience as requisitions are placed with the Procurement and Assignment Service by military, governmental, industrial or civil agencies requiring the assistance of those who must be dislocated for the duration of the national emergency.

VI. ALL PHYSICIANS OVER FORTY-FIVE

All physicians over 45 will be asked to enroll with the Procurement and Assignment Service at an early date. Those who are essential in their present capacities will be retained and those who are available for assignment to military, governmental, industrial or civil agencies may be asked by the Procurement and Assignment Service to serve those Agencies.

The maximal age for original appointment in the Army of the United States is 55. The maximal age for original appointment in the Naval Reserve is 50 years of age.

All inquiries concerning The Procurement and Assignment Service should be sent to The Executive Officer, 5654 Social Security Building, 4th and Independence Avenues, SW, Washington, D. C., and not to individual members of the Directing Board or of committees thereof.

INFLUENZA

CIRCULAR LETTER NO. 124

The following statement summarizing our present concepts of influenza has been prepared for the Surgeon General by the director of the Commission on Influenza of the Board for the Investigation and Control of Influenza and other Epidemic Diseases in the Army:

1. *Definition.*—Influenza is an acute respiratory disease of virus origin which occurs almost annually in epidemics of varying severity. Two distinct types (types A and B) of virus have been identified; others are suspected. The diagnosis should not be limited to outbreaks of high mortality, such as that of the autumn of 1918. The presence of influenza should be suspected when an undue incidence of unidentified, febrile, upper respiratory disease is encountered.

2. *General Features.*—The usual epidemic is characterized by its sudden appearance in a cantonment, its rapid spread to a peak in from three to four weeks, attacking from 10 to 40 per cent of the population, its low mortality, and its prompt subsidence in from six to eight weeks after onset.

In the average patient the onset is sudden, with chills or chilliness, pharyngeal irritation, generalized aches, prostration and slight dry cough. Respiratory symptoms are not prominent. The temperature reaches 100-103 F., and leukopenia or absence of leukocytosis is the rule. The febrile course lasts from three to five days, followed by relatively prompt recovery except for residual fatigue. An exaggeration of fever or an increase in severity of symptoms indicates the probability of respiratory complications, which vary from tracheitis and bronchitis to extensive pneumonia and empyema.

Complications are usually due to secondary bacterial invaders. The mortality varies with the nature and virulence of the bacterial agents. There may be rapidly fatal cases in which the virus infection is accompanied from the onset by bacterial infection; but more commonly the bacterial complications develop about the time of convalescence from the primary disease.

The virus can be recovered in experimental animals and from the nose and throat secretions of infected individuals. Tests with the patient's serum may be used to identify

the disease by demonstrating a rise in antibodies specific for the type of virus present. Immunity develops in convalescence and is effective for an indefinite period, probably longer than is usually assumed.

Approximately one fourth of a population may undergo subclinical infection and during the epidemic period serve as important agents in the transmission of infection.

3. *Control.*—(a) General Measures: General control measures should be directed not only toward the prevention of the transmission of influenza virus but also toward the protection of incipient cases and early convalescents from secondary infection with pathogenic bacteria. The virus of influenza is transmitted through the upper respiratory tract by direct droplet infection from an infected individual or by indirect infection with discharge from his respiratory tract. Crowding is a most important factor in the spread of the disease. In the presence of an epidemic, unnecessary congregation in mess halls, recreation centers or barracks should be eliminated, and existing regulations concerning ventilation and bed space in barracks and hospitals should be carried out. If the epidemic is severe, working quarantine of small units may be desirable.

New or unseasoned troops should be segregated, and the transfer of troops to and from infected camps should be discouraged. The transfer by train or transport of bodies of troops infected with influenza is particularly hazardous. Their close association under such conditions will result in the infection of many who would otherwise escape and in a high incidence of complications and deaths which otherwise would be avoided.

The control measures prescribed in paragraphs 2, 3 and 10, AR 40-220, should be strictly enforced. The admission and general management in hospital is clearly outlined in AR 40-245.

(b) Specific Measures: At present no specific control measure has been established, although vaccination methods are under investigation.

4. *Treatment.*—The treatment in uncomplicated cases of influenza is at present symptomatic. There is no evidence that chemotherapy influences the primary virus disease. The patient should be kept warm in bed for forty-eight hours after his temperature has returned to normal. Cold air frequently aggravates the irritation of the

respiratory passages. Steam inhalations and soothing cough mixtures with codeine often relieve a persistent distressing cough. Mild antipyretics and sedatives may be used, but narcotics other than codeine are generally contraindicated. Fluids should be given to 3,000 cc. or more daily. The bowels should be regulated when necessary with mild cathartics or enemas. A soft diet can be given as soon as the patient's appetite will tolerate it.

The patient should resume his normal activities gradually. When secondary bacterial invaders are prevalent, protective isolation for a week or more after recovery should be given. Any unexplained rise of temperature or a return of fever should be interpreted as the onset of pulmonary disease due to pathogenic bacteria. Under these conditions adequate measures for the diagnosis of pneumonia and the determination of the infecting bacterial agent should be instituted. Chemotherapy or other available types of therapy directed against the invading bacterium should be used.

By order of the Surgeon General:

JOHN A. ROGERS,
Lieutenant Colonel, Medical Corps,
Executive Officer.

RESERVE COMMISSIONS FOR MEDICAL STUDENTS

The National Headquarters of the Selective Service System stated January 1 that Brig. Gen. Lewis B. Hershey, director of Selective Service, has advised all local boards through their state headquarters that third and fourth year students in acceptable medical schools and first year interns may obtain reserve commissions in the Army or Navy and then will be permitted to complete their medical training, including one year of internship, before being ordered to active duty. Such medical students and interns may be deferred by their local boards in class II-A pending receipt of their commissions, but all who are eligible for a commission and do not apply may be considered for classification in class I-A if they are not deferred for other reasons and are found physically qualified for general military service.

Third and fourth year medical students and interns who are rejected after applying for commissions, and also first and second

year medical students and those registrants who have been accepted as students in a medical school, may be deferred in class II-A as long as their school officials certify that they give indication that they will become qualified medical practitioners, General Hershey said. He emphasized, however, that no group deferment is permissible under the law and that each case must be decided by a local board on the facts concerning the individual registrant involved.

Medical students and interns accepted by the Army are given commissions as second lieutenants pending graduation when they become first lieutenants in the Army Medical Reserve Corps. Those accepted by the Navy are commissioned as ensigns until graduation, when they become lieutenants (junior grade) in the Navy Medical Reserve Corps.

Committee Contributions

Maternal and Infant Welfare

BLOOD TRANSFUSIONS IN OBSTETRICS

Death from hemorrhage is one of the most common causes of maternal mortality. Although a certain number of cases could be saved by better obstetric care which would prevent the hemorrhage, there remain a large number of cases in which the bleeding will occur despite the best of care. The best weapon which we have in these cases is blood transfusion. Formerly a formidable procedure only possible in a hospital, the technique has now been simplified to the point where one person can carry it out in the home. Although it may not be possible to use this procedure on a moment's notice, as can be done in a large hospital, there are numbers of cases in which blood loss is so extensive that a transfusion or several transfusions within a twenty-four hour period may well be a life-saving procedure and will most certainly shorten the convalescent period and improve the health of the patient during the postpartum period. Transfusions are also of value in the patient with severe anemias from causes other than hemorrhage.

Recent work indicates that the new plasma preparations are of considerable value in certain types of toxemia in which the plasma protein levels are reduced.

The doctor that does obstetrics would do well to acquaint himself thoroughly with the possibilities of these procedures and equip himself to carry out the measures which are often capable of saving a life.

Prevention of Cancer

CANCER OF THE UTERINE FUNDUS

About ten per cent of the cancers of the uterus arise in the fundus. Most of these are adenocarcinomas in contrast to the squamous cell type of carcinoma usually found in the cervix. Carcinoma of the fundus rarely occurs under forty years of age and its greatest incidence is between fifty and sixty after the menopause, in contrast to cervical carcinoma whose greatest incidence is between forty and fifty.

The all important symptom is abnormal uterine bleeding, especially bleeding after the menopause. Postmenopausal bleeding should never be attributed to a return of menstruation. At the onset it is usually slight and often takes the form of a blood tinged watery discharge.

As is emphasized in the Cancer Manual distributed by the Committee on Cancer Control, abnormal vaginal bleeding although very suggestive of genital cancer gives no indication as to the location of the malignancy for it may be in the cervix, vagina, or uterine cavity. For this reason a complete gynecological examination is indicated. If bimanual and speculum examinations do not reveal a definite cause for the bleeding in the cervix or vagina a curetage must be done under anesthesia.

It is a common mistake to ascribe vaginal bleeding to a benign cervical polyp and do no more than to remove the growth. Likewise, the presence of uterine fibroids or other benign pelvic tumors does not rule out the possibility of a concealed carcinoma of the fundus. Only a uterine curettage can rule out carcinoma and in all these cases a curettage of the fundus should be done before or at the time of treatment and the treatment modified if cancerous tissue is found.

An accepted sequence in diagnosis and treatment is that at the time dilatation and curettage are done to obtain tissue for histological examination, radium is placed in the

fundus. The length of time that it is left in depends on how far the cancer has extended insofar as can be told by bimanual examination under anesthesia and by the histologic characteristics of the tumor.

Slides of the tissue are prepared by a rapid method and if the histological examination shows that there is no malignancy and there are no pelvic tumors the radium is left in only long enough for irradiation castration.

If malignancy is found the radium is left in long enough to have its maximum effect on the cancer and if the growth has not progressed too far anatomically a hysterectomy is indicated. The cancer can also be treated by x-ray irradiation usually before the hysterectomy. It is indicated in all cases which have progressed too far for hysterectomy.

The prognosis in the cases diagnosed and treated in the earliest stage is about 80 per cent five-year cures, and less than 10 per cent five-year arrest can be expected by intensive irradiation in the inoperable stages.

For Whom the Bell Tolls—In the words of Surgeon General Parran: "Public Health has become a people's cause." He compares this revolution with the Renaissance and the French Revolution in the fields of art and literature, and politics, respectively.

It may well be asked why this revival occurs at this time and what aspects thereof are likely to dominate the future scene. The last 10 years have witnessed some of the most striking social and political upheavals the world has seen. In all of them one may detect the hope for a newer and better world and a desire to be born well and to live well.

The American people have been shocked, in addition, into the realization of the problems of health by the recent examinations of its most favorable male age groups, under the terms of the Selective Service Act. The percentage of rejections of the young men of our country at ages 21 to 35, as physically unfit to enter training for military service or fit for limited service only, provides an important index of our general national health.

It is startling to be reminded once more that this excessive rejection rate should occur in perhaps the richest country in the world with respect to resources, man power, and scientific capacity.

The significant aspect of this recognition, however, lies in the militant desire of the public to develop plans and programs for correctives. Virtually all lay and professional groups insist upon a prompt attack on the state of affairs which the record discloses. No longer are people willing to wait for . . . leisurely recognition and elimination.—*Wolman, Am. J. Pub. Health, Dec. '41.*

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

SPECIMENS EXAMINED

December 1941

Examinations for diphtheria bacilli and Vincent's	1,304
Agglutination tests (typhoid, Brill's, undulant fever)	477
Typhoid cultures (blood, feces and urine)	552
Examinations for malaria	721
Examinations for intestinal parasites	2,114
Serologic tests for syphilis (blood and spinal fluid)	24,291
Darkfield examinations	30
Examinations for gonococci	1,798
Examinations for tubercle bacilli	1,697
Examinations for Negri bodies (microscopic)	40
Water examinations (bacteriologic)	914
Milk examinations	1,943
Pneumococcus typing	17
Miscellaneous	1,025
Total 36,923	

COURSE IN MALARIOLOGY

For the past two years the Bureau of Laboratories of the Alabama State Department of Health has arranged for a course in malariology to be given in the Montgomery and Birmingham laboratories. This course, consisting of one week of concentrated instruction in each laboratory, was made possible by the cooperation of the U. S. Public Health Service in detailing Miss Aimee Wilcox of the National Institute of Health as instructor. It was also sponsored by the Alabama Association of Medical Technicians and the Board of Medical Technicians' Examiners.

At this time it is a pleasure to announce that arrangements have been made for a repetition of the course this year but it will be given only in Montgomery. It will cover a two-weeks' period between the dates March 9th and March 21st.

The course is for the purpose of training medical technicians in the preparation, staining and examination of thin and thick blood films for malarial parasites. The differentiation of species of malarial parasites will be stressed.

The instruction is available at no expense to any public health or clinical laboratory technician in the state. The only require-

ment for admission is that each student furnish his own microscope.

We hope that the course will be well attended this year and that attendance will grow from year to year. The demand for persons well trained in malariology is on the increase and all persons interested should take advantage of this opportunity.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

COMMUNICABLE DISEASES IN 1941

The number of cases of communicable diseases reported in Alabama during 1941 as compared to the number reported in 1940 and the median of the nine years 1932-40 is shown in the following table.

	1941	1940	Median 1932-40
Typhoid fever	170	277	482
Typhus fever	299	286	341
Malaria	4,838	9,442	6,473
Undulant fever	45	70	48
Smallpox	9	51	47
Measles	9,817	3,205	3,205
Scarlet fever	1,176	939	879
Whooping cough	1,664	1,004	1,652
Diphtheria	728	546	1,095
Influenza	34,631	11,495	14,535
Mumps	2,731	845	1,000
Poliomyelitis	871	54	54
Encephalitis	16	23	26
Chickenpox	1,150	1,148	1,370
Tetanus	31	36	57
Tuberculosis	2,809	2,776	3,021
Tularemia	16	8	15
Pellagra	213	294	374
Meningitis	70	84	83
Pneumonia	4,075	4,760	3,915
Syphilis	21,918	16,131	11,223
Chancroid	152	64	64
Gonorrhea	5,066	4,797	3,620
Ophthalmia	28	13	15
Trachoma	1	3	3
Cancer	1,902	1,847	-----

The outstanding event during the year was, of course, the epidemic of poliomyelitis which affected a large part of the state and which reached a new high in Alabama's history. Fortunately, the death rate was comparatively low and the prompt steps taken will apparently limit the usual aftermath of deformities.

During the year there were also two other epidemics of considerable extent, namely,

influenza and measles. The influenza wave which swept across the United States was the cause of much illness but the mortality was not correspondingly high. The last epidemic of measles was in 1938 so a return in increased prevalence was not unlooked for. One of the most disappointing reports was that showing a 33 per cent increase in the diphtheria incidence over 1940. It is true that the 1941 figures are very favorable as compared to years prior to 1940 but it had been hoped that the incidence curve was still going down. Renewed activity in immunization should once more reverse this trend.

Increased activity in venereal disease work is reflected in the increased number of cases reported, particularly in regard to syphilis. The serologic survey of registrants conducted in the fall of 1940 uncovered many unknown infections which appear as new cases in 1941 although the infection in many instances was acquired years before.

On the favorable side of the picture is another new low in typhoid fever. It was feared that the conditions created by mass accumulations of people in connection with war industry might result in outbreaks of typhoid but these did not materialize. Malaria was considerably less prevalent than in the preceding year while other diseases fluctuated within normal limits.

GONORRHEA IN THE FEMALE

In attempting to obtain a smear from the female genitalia for the gonococcus, certain procedures will insure as high a number of positives as can be obtained by the smear method, whereas certain other procedures will quite often fail to reveal the presence of this organism.

Gonorrhea in the female involves certain definite areas, such as the urethra, Skene's glands (their openings are just within the urethra on its floor to the side of the midline and the glands are situated to either side of the urethra), Bartholin glands, the cervix and the fallopian tubes. The vagina is not primarily infected and is only involved secondarily. If the foci are cleared up the vagina automatically clears up too.

Many times the smear is obtained by just blindly wiping the swab in and around the vaginal introitus. With a copious discharge

the chances are good for obtaining a positive smear. However, in chronic infections this method is a useless procedure and very misleading since the number of positive smears will be few. Many infected women will be declared "not infected," when in reality they are spreading this infection to many of their contacts.

In chronic infections one should obtain the smear from either the urethra or cervix and not from the vaginal secretions. The urethra should be massaged then swabbed and the swab rotated on a clear slide for the smear. The cervical mucus should be removed first with a dry swab and then the cervix is massaged and the expressed pus is swabbed up for the smear.

BUREAU OF MATERNAL AND CHILD HEALTH

J. S. Hough, M. D., Acting Director

CAUSES OF REJECTIONS IN SELECTEES IN RELATION TO PHYSICAL STATUS IN CHILDHOOD

A recent issue of Public Health Reports contains an informative article comparing the physical status of draftees with that of the same individuals fifteen years before.

During the period 1922-1928, medical officers of the U. S. Public Health Service made physical examinations of white school children in Hagerstown, Maryland.

Later, in 1941, one of its Draft Boards examined 1,456 men, and the school physical examination records of 441 of them were available.

These two records were compared to determine the relationship between the causes of rejection in the men and the conditions existing in childhood.

Dental defects and defective eyes caused most rejections. Men found with dental defects by the Selective Service System had, in childhood, twice the amount of caries of the men who passed the examinations. Most of these dental defects were noted during school life.

As regards vision, the examinations made fifteen years before that of the Selective Service seem to demonstrate that even in childhood those who were rejected had inferior vision as compared with those who were accepted.

The two records also seem to indicate that the early state of nutrition was associated with the development of defects that fifteen years later disqualified the adult. Of the children whose nutrition was regarded as poor, 70.3 per cent were not accepted for service later.

"These findings indicate that a relatively large number of the selectees who have been rejected because of defective dentition and vision already gave evidence of the same defect fifteen years ago, while they were in elementary school."

This study, made by medical officers of the U. S. Public Health Service, indicates that probably little or no effort was made to correct the defects found in school children.

It suggests an opportunity for groups and civic organizations interested in child health and welfare to provide means for the correction of defects in children whose parents are unable to do so.

BUREAU OF SANITATION
D. S. Abell, M. S. in S. E., Director
STERILIZATION OF EATING AND DRINKING
UTENSILS

By
C. E. Fortenberry, B. S.
Senior Sanitarian

The purpose of sterilization of eating and drinking utensils is to destroy any pathogenic bacteria that may be on them and thus to prevent the spread of communicable disease by this means. The following table lists a few of the pathogenic bacteria that have been found on eating and drinking utensils together with their thermal death points:

Organism	Temperature and Time Necessary to Devitalize
C. diphtheriae	142° F. for 2 min.
E. typhi	147° F. for 2 min.
M. tuberculosis	158° F. for 1 min.
Staph. aureus	176° F. for 1½ min.

The Alabama State Board of Health Food Regulations are now in effect in 55 counties. There are approximately 4,000 food-handling establishments in these counties. The greater part of the physical structure requirements of the regulations have been met including those of Section 2F which requires

that facilities be provided for heating a supply of water ample for the cooking and washing needs of the largest meal-time business of an average week. One of the most important problems now is to educate or induce the operators to use the cleaning equipment and hot water in such manner as to produce clean and sterile utensils.

No doubt everyone will agree that, except for the preparation of food so as to make it palatable, adequate cleaning and sterilization of the dishes is the most important single operation in any food-handling establishment. The word sterilization is used here as meaning complete devitalization of all food-borne pathogenic organisms rather than in the usual meaning of complete killing of all bacteria. In the majority of food establishments in Alabama, an untrained negro is employed as the dishwasher. He usually receives the least pay and the least checking and direction of any employee in the establishment. Of course, no operator of a food establishment would think of hiring some one off the street about whom he knew nothing as his cashier. This would be taking too big a chance. Yet he seems unconcerned at the chances he and his customers take when improperly cleaned and unsterile utensils are used to serve food.

Sterilization of utensils may be accomplished by heat or by chemicals. However, chlorine is the only chemical disinfectant suitable for use on eating utensils at present. Because of its ineffectiveness in the presence of organic matter, grease films, etc., when utensils are not thoroughly cleaned, the Alabama State Board of Health Food Regulations do not include chemical sterilization as an approved method. These regulations require that all utensils and vessels intended for repeated service to different persons be thoroughly washed in water at a temperature of 120° F. or above, followed by immersion for at least one minute in clean water maintained at a temperature of not less than 170° F.; or if washed mechanically that the temperature of the soapy wash solution and of the rinse water be kept at 170° F. or above.

It is very essential that a plentiful supply of warm water at 120° F. and an efficient cleaning compound be used to remove all grease and food particles from the utensils before sterilizing is done.

We all know that it is impossible for a dish washer to put his hands in water that

is hot enough to sterilize dishes. Merely pouring or running hot water over dishes is not effective. Therefore, where dishes are washed by hand, one of the following methods is necessary if efficient sterilization is to be accomplished:

1. The clean dishes may be placed in the rinse vat which has previously been or is then sufficiently filled with water at 170° F. or above to cover all the utensils. After at least one minute of immersion the water can then be drained from the vat so that they can be removed by hand. This is slow, requires a fresh vat full of water for each batch of dishes, does not prevent the pocketing of air in inverted glasses and cups or permit drainage of upright dishes when the water is drained from the vat, and of course requires considerable fuel to heat the large amounts of water required. In addition, unless the water is considerably above 170° F. when it is run into the vat, the dishes will lower the temperature to a point that may not be effective. In establishments having many dishes to wash it is probably not economical or practical.

2. An alternative and far more practical and effective method is to provide racks or trays on which the washed dishes can be placed for submersion in the hot water and removal from it. These racks should be provided with handles so that the operator does not have to get his hands in the water at all. An additional advantage is that if the dishes are placed on the tray inverted and separated, the latent heat will cause them to dry without the necessity of wiping with a towel which adds bacteria itself if it is not scrupulously clean and changed often.

With this method of sterilizing dishes, the hot water can be used for several batches of dishes until it becomes soiled or greasy, if some means is provided to replace the heat lost from the cooling effect of each batch of dishes. This may be done by injecting steam into the water if steam is available. If a metal vat is used, a gas burner may be placed under it. If gas is not available, a gasoline pressure burner can be purchased for a few dollars, or even an oil stove can be used.

As effective sterilization of dishes as the writer has observed is being done in a number of small school lunchrooms. The sterilizing vats are constructed of galvanized metal without legs and with flat bottoms.

The vat is placed on an oil stove near the sink. Water is placed in the vat and the burners lit sufficiently far in advance of dish washing to permit the water to reach a temperature of or near boiling after which the flame is turned down but left sufficiently high to keep the water near the boiling point. As the dishes are washed, they are placed on wire racks that can be lowered into the hot water. In some cases, clean cloth sacks are used for holding the dishes where racks can not be provided. After a rack of dishes is placed in the hot water, they are left there until the next rack-full is washed. Ordinary water glasses can be immersed without breaking by letting them down into the steam from the water two or three times for a short period to temper them. This inexpensive but effective method can be used in any food serving establishment except the larger ones where the volume of dishes used makes time an important factor.

Mechanical washers of various sizes and types are on the market. These usually employ hot soapy water sprays followed by clean hot water. They may be roughly divided into two types. In the manually operated types, the dishes are placed in trays which are pushed by hand over the wash jets and then manually moved on to the hot water or sterilizing jets. In the automatic types, the dishes are placed on an endless conveyor which automatically carries them over the wash and then the sterilizing jets at a uniform speed fixed by the motor which moves the conveyor.

The manually operated types may or may not have thermostats to control the temperature of the wash and sterilizing water automatically. If thermostats are not provided, the temperature of these waters may be permitted to drop too low to be effective. In addition, the time that each rack remains over the sprays may vary. However, a reasonably conscientious operator can be quickly trained to operate this type properly.

The automatically operated or power driven types which are also equipped with thermostats eliminate both of the above faults. However, the purchase cost is higher even though the operating cost is usually lower, and they generally require more space for installation and operation.

In addition to efficiency of cleaning and sterilization, the cost of labor for dish washing is becoming increasingly important.

Studies show that, where a fairly large number of dishes have to be washed, mechanical washers save sufficient labor to more than offset their cost.

Food inspectors should urge and insist that efficient equipment and methods be employed for dish washing and sterilization. The type and size of equipment will naturally vary with the number of dishes to be washed, rapidity of washing necessary in each establishment, and even with the type of establishment. When practical and effective equipment and methods are secured in one establishment, operators of other similar size and type of establishments may be asked to visit that establishment (with the permission of the management of course, which is practically always gladly given) for the purpose of inspecting the equipment and its operation. When equipment and methods of proven effectiveness are in use near enough so that operators of similar size and type establishments may observe them, the inspector can then reasonably insist that they provide similar or at least equally effective equipment and methods if they expect to retain their permits.

For emphasis it is repeated that proper and effective cleaning of dishes and utensils is probably the most important single operation in a food serving establishment from a public health standpoint. Most attention should be directed to the most important things.

bulletin will include statistics on additional subjects, such as education, school attendance, citizenship, and country of birth of the foreign-born white, and detailed characteristics of the labor force, and will present data for incorporated places and for rural farm and rural non-farm parts of counties as well as for the state as a whole.

Reference to the census figures for 1930 and 1940 will show that the population of the state has increased 186,713—7.0 per cent. The native white population has increased 152,075—9.0 per cent. On the other hand the foreign-born white has decreased 3,753—23.9 per cent. The negro population increased 38,456—4.1 per cent. Persons not white or negro decreased 65—10.2 per cent. The rural farm population rose 2,255—0.2 per cent.

During the past decennium marked changes have taken place in the age characteristics of the population. In the age group under five years, there was a decrease of 5.3 per cent. From five to twenty-four years the figure remained practically constant, declining only 0.7 per cent. However, at twenty-five to sixty-four years, an increase of 16.8 per cent was recorded; at sixty-five years and over, an increase of 37.2 per cent. It is quite obvious that our population is aging with a loss of slightly more than 25,000 persons below twenty-five years of age and a gain of approximately 175,000 at twenty-five to sixty-four years and 37,000 at sixty-five years and over.

BUREAU OF VITAL STATISTICS

Leonard V. Phelps, S. B. in P. H., Director

FINAL POPULATION FIGURES

In the January issue of the Journal, preliminary population figures for counties in Alabama were shown. The final figures were released by the Bureau of the Census, Washington, D. C., on January 3, 1942. The table accompanying this article presents the population of the state by counties, classified by sex, race and age, with a further classification of the white population as native and foreign-born, and a column showing the rural farm population for each area.

It may be of interest to know that these figures are taken from the Second Series Population Bulletin for the State of Alabama, which will be issued shortly. This

War and Health in Britain—We very naturally dreaded the appearance of serious epidemic disease in the unusual conditions in which people were living, and in order to assist early diagnosis we established a system, under the management of the Medical Research Council, of emergency public health laboratories covering the whole country. Some of these laboratories were new creations; others, which had been in existence for years, were brought into the scheme. As a result every medical officer of health has now a first class laboratory within a maximum radius of 30 miles. Not only does the laboratory do all the bench work needed, but the staff go out and help with the field work. This is in the best tradition of your own admirable United States Public Health Service, and it will be a great disappointment to me if we do not retain these indispensable epidemiological units after the war.—*Jameson, Am. J. Pub. Health, Dec. '41.*

ALABAMA

SEX, RACE, AGE, AND RURAL-FARM POPULATION FOR THE STATE, BY COUNTIES:* 1940

County	Total population	Sex		Race					Age (years)					Rural- farm population
		Male	Female	White			Negro	Other races	Under 5	5 to 24	25 to 64	65 and over	21 and over	
				Total	Native	Foreign born								
The State.....	2,832,961	1,399,901	1,433,060	1,849,097	1,837,140	11,957	983,290	574	297,319	1,180,906	1,218,527	136,209	1,559,680	1,338,664
Counties:														
Autauga.....	20,977	10,413	10,564	9,783	9,775	8	11,194	-	2,440	9,041	8,296	1,200	10,897	15,108
Baldwin.....	32,324	16,667	15,657	24,240	22,914	1,326	8,071	13	3,589	13,076	13,489	2,170	17,852	14,391
Barbour.....	32,722	15,769	16,953	14,563	14,548	15	18,159	-	3,796	14,586	12,683	1,657	16,766	20,619
Bibb.....	20,155	10,265	9,890	13,519	13,445	74	6,630	6	2,389	8,862	8,028	1,076	10,401	10,440
Blount.....	29,490	15,199	14,291	28,227	28,217	10	1,263	-	3,462	13,014	11,716	1,298	15,166	23,226
Bullock.....	19,610	9,478	10,332	4,351	4,344	7	15,459	-	2,467	8,686	7,417	1,238	10,099	14,854
Butler.....	32,447	15,894	16,553	16,759	16,744	15	15,688	-	3,789	14,353	12,575	1,730	16,717	20,089
Calhoun.....	63,319	31,341	31,978	50,328	50,175	153	12,989	2	6,536	26,418	27,689	2,676	35,260	17,264
Chambers.....	42,146	20,693	21,453	24,210	24,202	8	17,894	42	4,349	17,947	17,924	1,926	23,158	18,702
Cherokee.....	19,928	10,187	9,741	18,203	18,201	2	1,725	-	2,331	8,752	7,966	879	10,312	17,038
Chilton.....	27,955	14,204	13,751	23,320	23,272	48	4,634	1	3,054	11,908	11,510	1,483	14,808	18,902
Choctaw.....	20,195	10,278	9,917	9,468	9,462	6	10,727	-	2,539	8,783	7,787	1,086	10,197	15,738
Clerke.....	27,636	13,909	13,727	13,215	13,204	11	14,417	4	3,107	11,778	11,137	1,614	14,691	17,656
Cley.....	16,907	8,420	8,467	14,285	14,287	2	2,618	-	1,724	7,215	6,940	1,028	9,098	13,142
Cleburne.....	13,629	6,945	6,684	12,637	12,616	21	992	-	1,633	6,012	5,228	756	6,964	10,032
Coffee.....	31,987	15,939	16,048	25,428	25,415	13	6,559	-	3,690	14,420	12,544	1,333	16,328	22,803
Colbert.....	34,093	16,845	17,248	25,513	25,415	98	8,580	-	3,585	14,248	14,630	1,630	18,707	13,658
Conecuh.....	25,489	12,689	12,800	14,139	14,131	8	11,350	-	3,054	11,442	9,592	1,401	12,722	19,852
Coosa.....	13,460	6,913	6,547	8,563	8,561	2	4,897	-	1,525	5,926	5,253	756	6,900	9,802
Covington.....	42,417	20,847	21,570	35,505	35,479	26	6,912	-	4,602	16,220	17,744	1,851	22,799	24,117
Crenshaw.....	23,631	11,717	11,914	15,853	15,850	3	7,778	-	2,696	10,287	9,424	1,224	12,410	17,955
Cullman.....	47,343	23,901	23,442	46,761	46,517	244	581	1	5,380	21,179	18,760	2,024	24,234	37,455
Dale.....	22,685	11,256	11,429	17,446	17,440	6	5,239	-	2,458	9,756	9,304	1,167	12,073	16,166
Dallas.....	55,245	26,441	28,804	14,500	14,387	113	40,744	1	5,835	22,878	23,188	3,344	30,193	31,482
De Kalb.....	43,075	21,583	21,492	42,266	42,248	18	808	1	4,666	18,947	17,556	1,906	22,522	34,077
Elmore.....	34,546	17,582	16,964	20,928	20,916	12	13,616	2	3,526	14,878	14,355	1,787	18,705	22,137
Escambia.....	30,671	15,694	14,977	20,494	20,456	38	9,865	312	3,420	12,982	12,767	1,502	16,432	12,640
Etowah.....	72,580	36,151	36,429	62,016	61,820	196	10,563	1	7,506	30,099	32,223	2,652	40,772	21,196
Fayette.....	21,651	10,881	10,770	18,585	18,579	6	3,066	-	2,424	9,293	8,879	1,055	11,429	16,933
Franklin.....	27,552	13,935	13,617	26,087	26,071	16	1,465	-	3,329	12,344	10,599	1,280	13,858	19,112
Geneva.....	29,172	14,494	14,678	25,147	25,142	5	4,025	-	3,367	12,794	11,645	1,366	15,134	19,937
Greene.....	19,185	9,280	9,905	3,103	3,085	18	16,082	-	2,200	8,094	7,647	1,244	10,140	16,308
Hale.....	25,533	12,567	12,966	7,177	7,167	10	18,356	-	3,025	11,058	9,969	1,481	13,018	20,998
Henry.....	21,912	10,769	11,143	11,204	11,203	1	10,708	-	2,593	9,965	8,368	986	10,957	16,931
Houston.....	45,665	22,464	23,201	31,069	31,013	56	14,596	-	4,610	19,328	19,725	2,002	25,131	23,872
Jackson.....	41,802	21,190	20,612	39,184	39,172	12	2,618	-	5,249	18,645	16,058	1,850	20,942	28,308
Jefferson.....	459,930	223,054	236,876	280,756	275,180	5,576	179,150	24	38,194	171,161	231,371	19,204	284,359	24,764
Lamar.....	19,708	9,965	9,743	16,731	16,729	2	2,977	-	2,244	8,631	7,837	996	10,195	15,860
Laurens.....	46,230	22,854	23,376	38,764	38,656	108	7,466	-	5,098	19,653	19,281	2,198	24,824	24,298
Lewrence.....	27,880	14,091	13,789	21,600	21,594	6	6,280	-	3,368	12,682	10,512	1,318	13,826	22,323
Lee.....	36,455	17,851	18,604	15,840	15,797	43	20,615	-	3,891	15,844	15,091	1,629	19,555	18,539
Limestone.....	35,642	17,787	17,855	26,810	26,776	34	8,832	-	4,281	15,644	14,105	1,612	18,154	27,935
Lowndes.....	22,661	11,013	11,648	3,457	3,450	7	19,204	-	2,994	10,069	8,190	1,408	11,130	19,816
Macon.....	27,654	13,565	14,089	4,946	4,928	18	22,708	-	3,192	12,032	10,893	1,537	14,291	20,620
Madison.....	66,317	32,720	33,597	47,927	47,836	91	18,385	5	7,004	28,398	27,752	3,163	35,545	32,357
Marengo.....	25,736	17,526	18,210	9,727	9,695	32	26,009	-	4,032	15,142	14,445	2,117	18,977	26,901
Merion.....	26,776	14,511	14,265	27,775	27,767	8	996	5	3,569	13,076	10,922	1,209	14,194	21,290
Marshall.....	42,395	21,285	21,110	41,225	41,214	11	1,170	-	4,671	18,522	17,419	1,783	22,380	29,886
Mobile.....	141,974	68,758	73,216	90,296	88,380	1,916	51,583	95	12,566	51,720	70,555	7,133	87,880	11,220
Monroe.....	29,465	14,593	14,872	13,848	13,831	17	15,593	24	3,678	13,407	11,006	1,374	14,479	22,059
Montgomery.....	114,420	55,582	58,838	57,082	56,427	655	57,334	4	9,316	43,745	55,566	5,793	70,730	24,467
Morgan.....	48,148	23,824	24,324	39,998	39,902	96	8,149	1	4,943	19,932	20,764	2,509	26,956	23,336
Perry.....	26,610	12,927	13,663	7,515	7,499	16	19,095	-	3,353	11,906	9,889	1,462	13,058	20,509
Pickens.....	27,671	13,827	13,844	14,565	14,551	14	13,105	1	3,143	12,059	10,979	1,490	14,297	21,923
Pike.....	32,493	16,002	16,491	17,307	17,281	26	15,177	9	3,587	13,636	13,637	1,633	17,650	21,357
Randolph.....	25,516	12,612	12,904	19,652	19,649	3	5,864	-	2,827	11,241	10,099	1,349	13,209	18,621
Russell.....	35,775	17,299	18,476	14,674	14,638	36	21,101	-	3,902	15,825	14,532	1,516	18,751	16,022
St. Clair.....	27,336	13,923	13,413	21,628	21,579	49	5,696	12	3,106	11,606	11,253	1,371	14,511	14,030
Shelby.....	28,962	14,648	14,314	22,112	22,063	49	6,848	2	3,139	12,184	12,046	1,593	15,506	13,292
Sumter.....	27,321	13,274	14,047	5,621	5,610	11	21,700	-	3,297	11,731	10,621	1,672	14,077	20,710
Talladega.....	51,832	25,310	26,522	33,643	33,586	57	18,188	1	5,909	23,004	20,587	2,332	26,738	22,549
Tallepoose.....	35,270	17,512	17,758	24,023	23,991	32	11,247	-	3,578	15,069	14,887	1,736	19,407	17,858
Tuscaloosa.....	76,036	37,733	38,303	51,834	51,611	223	24,200	2	7,091	30,232	35,074	3,639	44,374	26,088
Walker.....	64,201	32,381	31,820	57,298	57,139	159	6,902	1	7,622	28,326	25,703	2,550	32,649	22,239
Washington.....	16,188	8,331	7,857	10,023										

*Release of U. S. Bureau of the Census, Jan. 3, 1942.

CURRENT STATISTICS
*PREVALENCE OF COMMUNICABLE DIS-
EASES IN ALABAMA

	1941		
	Nov.	Dec.	Estimated Expectancy Dec.
Typhoid	10	4	14
Typhus	37	46	32
Malaria	667	186	145
Smallpox	0	0	1
Measles	129	129	65
Scarlet fever	235	156	109
Whooping cough	67	55	137
Diphtheria	155	92	129
Influenza	312	291	713
Mumps	66	49	65
Poliomyelitis	49	20	4
Encephalitis	1	2	1
Chickenpox	77	107	148
Tetanus	3	2	3
Tuberculosis	207	167	224
Pellagra	16	29	12
Meningitis	2	3	6
Pneumonia	180	205	422
Syphilis	1315	886	703
Chancroid	23	15	4
Gonorrhea	401	311	284
Ophthalmia neonatorum	1	0	0
Trachoma	0	0	0
Tularemia	0	0	0
Undulant fever	4	4	3
Dengue	0	0	0
Amebic dysentery	1	0	0
Cancer	167	151	0
Rabies—Human cases	0	1	0
Positive animal heads ..	13	12	---

*As reported by physicians and including deaths not reported as cases.
The Estimated Expectancy represents the median incidence of the past nine years.

Woman's Auxiliary

Mrs. F. C. Smith, Chairman
Press and Publicity Committee

The following, from the message of Mrs. V. E. Holcombe, President of the Auxiliary to the American Medical Association in 1941, and delivered that year before the annual meeting of the Auxiliary in Cleveland, should prove interesting to the Auxiliaries in Alabama:

The Woman's Auxiliary holds the belief that its fundamental function is to serve as the handmaiden of the American Medical Association. This is demonstrated by the assistance of state auxiliaries, when requested, in fighting legislation which is inimical to the medical profession and the health of the people and in supporting beneficial legislation. The auxiliary also assisted the Bureau of Health Education of the Association in making a survey of women's health interests by contacting club members in various communities. In many instances also the auxiliary has been helpful in getting questionnaires completed by the doctors and returned to the American Medical Association in order that it may have accurate information about every doctor and his qualifications in various capacities should he be called to service in the needs of national defense.

Presidents since time immemorial have "pointed with pride" and I would not be the first to violate this time-hallowed precedent. Therefore, I should like to mention that, according to re-

ports, during the past year the Hygeia subscription list has increased substantially.

You are all familiar with the charge that "self praise is half scandal," and in my recital to date I have endeavored merely to sketch in a brief and factual manner some of the high lights of the myriad activities of the Woman's Auxiliary to the American Medical Association. However, in the hearts of all frail humanity—and in women's hearts, most human and most frail—is a desire for approbation and for praise. I therefore believe that you who have so loyally given of your labor and your love will be gratified to know that our Auxiliary is constantly gaining in prestige. In support of this statement, I would quote opinions recently expressed by some of the nation's most prominent physicians, physicians whose names are known to all of you.

Dr. Fishbein has said: "Doctors wives should know what is going on. A wife is not a first class doctor's wife unless she knows about his work and the progress being made in medicine."

Dr. Roy W. Fouts, Vice-Speaker of the House of Delegates of the American Medical Association has this comment: "We challenge you—you are engaged in a noble work, imbued with the ideals and ethics of organized medicine."

Dr. Frank H. Lahey declared: "I have always felt that the Woman's Auxiliary to the American Medical Association was an excellent thing. The sacrifices which are associated with being the wife of a doctor go to develop qualities of character that are extremely desirable."

A prediction of the future was given by Dr. Nathan B. Van Etten when he said: "I believe that the quality of your membership is such that you may be able to influence women's organizations of all kinds in a beneficial way for the service of the community and the promotion of public health. I believe that you can materially influence health statistics in the next decade!"

Dr. Ralph A. Fenton called attention to an important task we can perform: "Your influence through membership in other organizations is an important source to them of valid information regarding the public health."

Dr. Edward H. Cary concluded his "Suggestions from a Past President" with the statement: "For a long time I don't believe the medical profession gave serious thought to the marvelous work which the ladies of the Auxiliary have so patriotically rendered, but the profession is made up of very smart doctors who remain abreast of the times. Knowing these facts, I can visualize increased interest on the part of both the men and the women who go to make up the combination most effective in medicine, the doctor and his wife."

We wish to meet the challenge that these men have made, for we believe that "ours is a fixed and lasting obligation" to organized medicine and to the individual doctor.

By expending our energy, our time and our efforts, if we have succeeded in interpreting fairly and honestly to the laity the aims and objectives of scientific medicine and, if we have succeeded in winning from the American Medical Association and its component medical associa-

tions recognition of the signal services which it is ours, and ours alone, to render, then, in the words of Wordsworth, we have achieved our goal—

“Enough, if something from our hands have power

To live and act, and serve the future hour.”

May I, in saying farewell to you as your president, express to each member of the Auxiliary my belief in you and my confidence that you will allow nothing to cause you to deviate from the fundamental channels of our program. In the trying days which must inevitably come, may you, with clear vision and a determination born of high ideals, accept the added duties, dispatch the assignments, discriminate, evaluate and continue to move forward.

* * *

The Medical Auxiliary to the Madison County Medical Society has most attractive yearbooks for its members this year. Officers are: President, Mrs. J. O. Wikle; Vice-President, Mrs. Frank Jordan; Secretary, Mrs. H. O. Walker; and Treasurer, Mrs. Moody Walker. Program Committee: Mrs. W. M. McKissack, Mrs. E. V. Caldwell and Mrs. J. L. Jordan; Public Relations: Mrs. T. E. Dilworth, Mrs. Carl Grote and Mrs. Moody Walker; Historian, Mrs. M. M. Duncan; Lettie Daffin Perdue, Mrs. W. G. McCown; Jane Todd Crawford, Mrs. Cary Walker; Research, Mrs. J. E. Walker; Press and Publicity, Mrs. J. E. Whitaker; Telephone: Mrs. M. R. Moorman and Mrs. J. E. Miller; and Flowers, Mrs. J. B. Laughlin. Meetings are held on the first Wednesday of each month and interesting programs have been planned for each meeting. Especial attention is being given to the fight for cancer control. One program was on Gardens for Defense and another, More Power to Our Kitchen.

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Officers of the Woman's Auxiliary to the Mobile County Medical Society are: President, Mrs. J. Mac Bell; 1st. Vice-President, Mrs. H. R. Cogburn; 2nd. Vice-President, Mrs. C. V. Partridge; Recording Secretary, Mrs. J. O. Muscat; Corresponding Secretary, Mrs. A. J. Brown; Treasurer, Mrs. C. M. Cleveland; and Historian, Mrs. Vaun Adams. At the November meeting, which was held at the home of Mrs. V. H. Hill, Dr. O. L. Chason was the guest speaker, his subject being Domestic Servant Health.

* * *

The Bessemer Medical Auxiliary was entertained by Mrs. J. R. Horn and Mrs. J. R.

Chandler at the home of Mrs. Horn in December. Mrs. Horn's attractive home was decorated for the Christmas season, and after a delightful luncheon a business meeting was held. A shower of children's clothes, medicines and foods was given for the nursery school, and surgical instruments were donated for Britain. Members attending were Mrs. A. W. Davidson, Mrs. W. N. Payne, Mrs. H. C. Springer, Mrs. R. E. Lilly, Mrs. Clay Ragsdale, Sr., Mrs. Clay Ragsdale, Jr., Mrs. G. J. Roscoe, Mrs. C. N. Garmon, Mrs. J. R. Pow, Mrs. G. W. Williamson, Mrs. F. C. Smith; and two new members, Mrs. Ben Perry and Mrs. Curtis Roberts.

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

A RESOLUTION

Adopted by the
Bullock County Medical Society
January 14, 1942

Whereas, God in His infinite wisdom has seen fit to remove from our companionship, councils and daily work our beloved brother Dr. Oscar Johnson on December 7, 1941; and

Whereas, He was taken to his place of rest after devoting a life to the relief of others; and

Whereas, He was a friend to all creeds and colors, ever ready to lend a helping hand to those in need of the physical comforts of life; be it

Resolved, That, though we bow in humble submission to the hand of Providence, we most keenly feel our loss; and will always keep in our memory his genial nature and his ever readiness to be of service to mankind; and be it further

Resolved, That a page in the secretary's book of the Bullock County Medical Society be reserved for his memory; and that this book be kept in the archives of the society; and be it further

Resolved, That a copy of these resolutions be sent to the family and also be printed in the Union Spring Herald.

BAEHR RECEIVES APPOINTMENT

President Roosevelt has appointed Dr. George Baehr, Chief Medical Officer of the Office of Civilian Defense, to be a member of the Health and Medical Committee of the Office of Defense Health and Welfare Services. Dr. Irvin Abell, Louisville, Kentucky, chairman of the Committee on Medical Preparedness of the American Medical Association, is chairman of the Health and Medical

Committee and other members are the Surgeon General of the U. S. Army, Major General James C. Magee; the Surgeon General of the U. S. Navy, Rear Admiral Ross T. McIntire; the Surgeon General of the U. S. Public Health Service, Dr. Thomas Parran, and the chairman of the Division of Medical Sciences, National Research Council, Dr. Lewis W. Weed, Baltimore. The Office of Defense Health and Welfare Services is a part of the Office for Emergency Management which in turn is part of the Executive Office of the President. The director of the ODHWS is Paul V. McNutt, who is also Federal Security Administrator.

NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The sixth annual meeting of The New Orleans Graduate Medical Assembly will be held March 2 through 5, headquarters at the Roosevelt Hotel. The popularity which the Assembly has enjoyed at the past meetings gives proof that the program offers the type of intensive postgraduate study the medical profession desires, presenting many new and outstanding features which are of interest to the specialist, as well as the general practitioner.

It would be impossible to enumerate here the names and subjects of all of the essayists but each speaker is among the country's foremost medical educators and their participation in the meeting will play an important part in its success. A complete list of the speakers, together with their specialties, is carried in an announcement in this issue of the Journal.

In addition to the lectures many other features will add to the value of the meeting. The numerous scientific exhibits will be of great interest and there will be approximately sixty exhibits on display by ethical manufacturers of drugs and equipment.

It is hoped that many doctors will plan now to set aside a few days from their regular routine and attend the Assembly. The meeting offers an excellent opportunity to combine postgraduate work together with the establishment of good fellowship. The registration fee of ten dollars covers all features, including four daily round-table luncheons.

NEXT ANNUAL MEETING MONTGOMERY APRIL 21, 22, 23, 1942

Book Abstracts and Reviews

Diseases of the Blood and Atlas of Hematology. By Roy R. Kracke, M. D., Professor of Bacteriology, Pathology and Laboratory Diagnosis, Emory University School of Medicine; Pathologist to the Emory University Hospital; Consultant in Hematology to the Grady Hospital and Eggleston Hospital for Children, Atlanta, Ga. Formerly, Director of the Hematological Registry, American Society of Clinical Pathologists. Cloth. Price, \$15.00. Pp. 692, including 54 color plates and 46 other illustrations. Philadelphia: J. B. Lippincott Company, 1941.

Those who are familiar with the first edition of this book realize its value in the field of blood work. This second edition is even more useful than the first because certain material has been corrected to meet the more recent knowledge of blood diseases. The treatment of blood diseases as well as their recognition is given in detail. There is a comprehensive section on blood transfusion, the operation of a blood bank, and the use of blood plasma. Because vitamin K has made such rapid advances, a complete section is given to its development. Recent progress in the treatment of leukemia by use of radiation and radioactive isotopes is the subject of one chapter. The forty-three colored plates of normal and abnormal blood cells would be a great help to any microscopist.

The author has compiled a book which offers an easily accessible reference for the practitioner as well as the laboratory worker.

N. K. W.

Immunity Against Animal Parasites. By James T. Culbertson, Assistant Professor of Bacteriology, College of Physicians and Surgeons, Columbia University. Cloth. Price, \$3.50. Pp. 271. New York: Columbia University Press, 1941.

The book has three parts. Part One, entitled Natural Resistance and Acquired Immunity, is general in nature and is divided into such topics as Natural Resistance, Age Resistance, Mechanisms of Specific Immunity, etc. The generalities are comparatively few and brief. Furthermore, the fundamental principles are practically identical with those of bacterial immunity. Inasmuch as the pages swim with specific isolated examples which tend to bewilder the reader, one is disappointed in feeling, after he has finished the section, that he has learned but little.

Part Two takes up in orderly manner the diseases as follows: amebiasis, leishmaniasis, malaria, coccidiosis, trematodiasis, cestodiasis and nematodiasis. As a particular species of parasite is discussed all knowledge relative to it is given. This section is readable and informative.

Part Three deals with applied immunology; i.e., vaccination, diagnosis, etc. All of this information had been presented before in Part One or Part Two, or both, with the exception of a portion dealing with the new attempts to classify parasites by serologic methods. It is felt that the book is too voluminous. This is due primarily to excessive repetition and secondarily to lack of condensation. All of the material should have been included under headings of Part Two and further attempt made to present it as narration.

The author did an amazing amount of reading in preparing the book and should be given much credit for assembling the information. Over 1,300 references are given. It would have been well if these had been listed in one section and classified according to the plan of Part Two.

L. S. S.

Textbook of Pediatrics. By J. P. Crozer Griffith, M. D., Ph. D., Emeritus Professor of Pediatrics in the University of Pennsylvania; Consulting Physician to the Children's Hospital, Philadelphia; Consulting Physician to St. Christopher's Hospital for Children; Consulting Pediatricist to the Woman's, the Jewish, and the Misericordia Hospitals, etc.; Corresponding Member of the Societe' de Pediatrie de Paris; and A. Graeme Mitchell, M. D., B. K. Rachford, Professor of Pediatrics, College of Medicine, University of Cincinnati; Medical Director and Chief of Staff of the Children's Hospital of Cincinnati; Director of the Children's Hospital Research Foundation; Director of Pediatric and Contagious Services in the Cincinnati General Hospital. Third edition. Cloth. Price, \$10.00. Pp. 991 with 220 illustrations, 12 in color. Philadelphia: W. B. Saunders Company, 1941.

This is a complete revision of Griffith's and Mitchell's book *The Diseases of Infants and Children*. The title has been changed because more emphasis has been made on growth and development and preventive pediatrics. Contributions to this text have been made by eminent authorities both in and outside the pediatric field. The book has been written in one volume but the subject matter has been considered in two divisions.

Division I deals with general subjects such as physical growth and development; physical hygiene; mental and emotional development and mental hygiene; feeding of infants and children; characteristics of diseases in infancy and childhood; symptomatology and diagnosis; mortality, morbidity and prevention of diseases; therapeutics; and pediatric institutions and organizations.

Division II pertains to disease. This division is subdivided into sections. Section one takes up the diseases of the newborn infant; section two, infectious or communicable diseases; section three, general nutritional, metabolic and miscellaneous diseases; and sections four through twelve consider diseases affecting the various systems.

The text contains many illustrations and pictures. This book is a good one. It should be in the office of every practicing physician who has need of an up-to-date reference book in pediatrics.

B. M. B.

Cancer of the Face and Mouth. By Vilarly P. Blair, M. D., Sherwood Moore, M. D., and Louis T. Byars, M. D., St. Louis. Cloth. Price, \$10.00. Pp. 599, with 260 illustrations and 64 plates of operative procedures. St. Louis, Mo.: The C. V. Mosby Company, 1941.

This book is invaluable not only for those who treat cancer of the face and mouth but also for those physicians who are first called upon to decide the seriousness of an apparently insignificant lesion.

The descriptions and illustrations of precancerous lesions and early cancers are very clear and concise.

Treatment is considered in detail and with common sense. There is a tendency to overemphasize a pet therapeutic technique.

The chapter on follow-up and statistics answers any question of prognosis which might arise.

The ideas of a surgeon and a radiologist are here united to give a composite picture of cancer and its treatment unequalled in any book with which we are familiar.

F. W. R.

Clinical Pellagra. By Seale Harris, M. D., Birmingham, Professor Emeritus of Medicine, University of Alabama; Assisted by Seale Harris, Jr., M. D., Birmingham. Formerly Assistant Professor of Medicine, Vanderbilt University; with Foreword by E. V. McCollum, Ph. D., Sc. D., LL. D., Professor of Biochemistry, School of Hygiene and Public Health, The Johns Hopkins University, Baltimore, Maryland. Cloth. Price, \$7.00. Pp. 494, with 17 illustrations. St. Louis: The C. V. Mosby Company, 1941.

This book represents the mature thinking of a man who has been a student of pellagra and pellagrous patients for many years and it embraces much more than the title suggests. A number of collaborators report on individual work in the field of pellagra or nutrition, but the whole book is permeated with the author's viewpoint. Those who are looking for a description of pellagra under the usual headings of Etiology, Pathology, Symptomatology, Diagnosis, Treatment and Prognosis will find what they are looking for. Much more of the book, however, is devoted to a discussion of nutritional deficiencies and their various manifestations. Nicotinic acid and its lack is given its rightful place as the causative factor *per se* of pellagra but the disease is not as simple as that. Predisposing causes, such as alcohol, infection, toxins and organic disease, are discussed, while the association of nicotinic acid deficiency with other vitamin lack is clearly shown.

The author has an interesting style of writing and the book is extremely readable. It should have a place in the library of every man who treats pellagra.

D. G. G.

The Story of Clinical Pulmonary Tuberculosis. By Lawson Brown, M. D., Late Director of Trudeau Sanatorium; Lecturer in Trudeau School of Tuberculosis; Author of *Rules of Recovery from Tuberculosis*, etc. Cloth. Price, \$2.75. Pp. 411. Baltimore: The Williams & Wilkins Company, 1941.

All the world loves a narrative but few like factual uncolorful history. This is definitely a story and not a history. It is the story of a man who lived with the disease himself, who lived amongst those who had it and lived ever with the purposeful view of improving the treatment, knowledge and conditions of fellow beings suffering from this malady from which he eventually died himself. This exemplary trait, the method of diffusing his knowledge and emotions among his students, is here manifest in this story-type episode, which reveals the picture as recorded through the eyes of a great clinician and teacher.

This is a narrative much of it as readable for the layman as the physician and this is especially so for those individuals who have had the disease, chased the cure, or had close members of their families who have been tuberculosis cases

to whom it carries a real humanistic, personalistic interest.

The approaches to the subject in Chapters 2, 3 and 4, headed "The Visit in 1700," "The Visit in 1800," and "The Visit in 1900," respectively, are unique and take one back to these periods and portray the tuberculosis expert's visit on his patient in each subsequent period and how vastly changing knowledge altered the physician's approach and treatment of his patient. It carries one back through these centuries in picturesque style as relates to the knowledge of tuberculosis.

Dr. Edward W. Archibald has contributed an inspiring chapter on the development of surgical methods in treatment, and Dr. Homer L. Sampson has written a worthwhile chapter on diagnosis by x-ray.

This personalized story bears the characteristics, the finger prints, the mental imprints, the observational recordings and the marginal notations of a great phthisiologist, Dr. Lawrason Brown, which material is here welded together into a form which should interest and encourage individuals and sanatoria to own at least one copy to circulate among their friends and patients.

H. T.

Nutritional Deficiencies. By John B. Youmans, A. B., M. S., M. D., Associate Professor of Medicine and Director of Postgraduate Instruction, Vanderbilt University Medical School, Nashville, Tennessee. Cloth. Price, \$5.00. Pp. 385. Philadelphia: J. B. Lippincott Company, 1941.

The author of this book has combined experimental laboratory data with clinical manifestations of nutritional deficiencies in such a way as to be most helpful to the physician in understanding and managing nutritional deficiencies in his practice.

Vitamins, protein, iron and iodine deficiencies are discussed under the following uniform headings: history, nature and function, pathology and pathogenesis, incidence and epidemiology, symptoms and signs, diagnosis and treatment. Since an ounce of prevention is still better than a pound of cure, in relation to illness, prevention is stressed before curative treatment.

The author is aware of the rapid advance in the field of nutrition, yet has not included material which has not been confirmed, but also gives much new information depending on the reliable judgment of practitioners to determine its worth.

The appendix is a very interesting section of the book, giving a tabular summary of the vitamins, principal dietary sources of the essential food factors and the technique of various laboratory tests for diagnosing deficiency diseases.

This is a comprehensive study written in language that the layman can understand and may be profitably read not only by medical men but all persons interested in the field of nutrition.

The author, an authority on the subject, is preeminently equipped to write on any phase of nutrition. The book can be read with profit.

A. T.

Man—The Mechanical Misfit. By G. H. Estabrooks, Professor of Psychology in Colgate University. Cloth. Price, \$2.50. Pp. 251. New York: The Macmillan Company, 1941.

Dr. Estabrooks, a psychologist, puts forth his views on evolution in a book intended for the lay reader. In a rather racy style, racy because he starts way back millions of years ago, Dr. Estabrooks traces some of nature's fantastic experiments and failures with dinosaurs and other huge beasts. The greater part of the book is devoted to the evolution of man. Dr. Estabrooks, in spite of his humorous and often jocular tone, is sad indeed at nature's ingenious but somewhat shortsighted experimentation with homo sapiens. Maybe things would not have been so bad if man did not try to improve on nature and more or less abrogate the law of survival of the fittest. Doctors and scientists have been the worst culprits by assisting inferior stock to perpetuate itself. Philanthropists, clergymen and social workers are mistaken too according to Dr. Estabrooks, and what are we to expect eventually? Perhaps the doom of man.

Perhaps, as even the title suggests, Dr. Estabrooks is too much the mechanist. Man is more than a machine. Then too, the known facts of heredity do not support such a gloomy outlook. At any rate, this book is entertaining reading with some food for thought and perhaps a little ammunition for the less social conscious physician.

A. M. G.

Professional Adjustments. By Gene Harrison, A. B., R. N., Educational Director, Druid City Hospital, School of Nursing, Tuscaloosa, Alabama. Cloth. Price, \$2.25. Pp. 204. St. Louis, Mo.: The C. V. Mosby Company, 1941.

In Professional Adjustments, Gene Harrison has adequately covered the field of nursing ethics. The thing that makes this book superior to the old type presentation of ethics, especially for a girl who has just entered nursing school, is that the author not only tells what should be done but why it should be done. She does not list a lot of rigid codes for conduct without explaining why these codes are necessary.

Another feature of the book is the use of examples: we all learn best by concrete example and Miss Harrison has been liberal with explanations by this method.

The simplicity of the whole book is wonderful, even daring. It should be especially helpful for the young person just entering the profession, and could be used to advantage by any nurse (although a second volume, Professional Adjustments—II, to be published soon, has been written for the more advanced nurse). The author evidently had this in mind when she put in blank pages at the end of each chapter; in order that the reader can make personal notes which may be used for self-improvement. Miss Harrison also includes a list of questions at the end of each chapter that will at least make one think even if one does not answer the questions.

The book itself is a good example of a hard task excellently handled.

M. L. P.

The Therapy of the Neuroses and Psychoses: a Socio-Psycho-Biologic Analysis and Resynthesis. By Samuel Henry Kraines, M. D., Associate in Psychiatry, University of Illinois College of Medicine; Assistant State Alienist, State of Illinois; Diplomate of American Board of Psychiatry and Neurology. Cloth. Price, \$5.50. Pp. 512. Philadelphia: Lea and Febiger, 1941.

Dr. Kraines wrote this book to help the general practitioner understand and treat his neurotic patients. The first five chapters explain what medical psychology is and stress the importance of understanding rather than the classification of symptoms. Numerous mechanisms used by the neurotic as defense against untenable situations are described. This includes a good description of 'psychosomatic' implications and the role played by the autonomic nervous system.

Chapters VI to XIV are devoted to the principles and technique of psychotherapy. Dr. Kraines wisely stresses the rather formidable sounding but commonsense socio-psycho-biologic approach. In other words, everything is considered that might have a bearing on the patient. Sensible procedures for retraining attitudes and reaction patterns are given.

Chapter XIV cites illustrative psychoneurotic symptoms and their treatment. Dr. Kraines, drawing cases from his practice, shows examples of the psychic element in the cardiovascular, digestive and other body systems. Much helpful information is given.

The XV and XVI chapters deal with the psychoses and psychopathics. Chapter XVII is a criticism of psychoanalysis, adds nothing and might better be left out.

This book can be recommended to the physician as a very good psychiatric compendium and one that gives a simple and practical outline of medical psychology.

A. M. G.

Shock Treatment in Psychiatry. By Lucie Jessner, M. D., Ph. D., Resident Psychiatrist, Baldpate, Georgetown, Mass.; Graduate Assistant in Psychiatry, Massachusetts General Hospital; Assistant in Psychiatry, Beth Israel Hospital, Boston; and Vincent Gerard Ryan, M. D., Associate Psychiatrist, Elmorest Manor, Portland, Conn.; Assistant in Psychiatry, Harvard Medical School. Cloth. Price, \$3.50. Pp. 149. New York: Grune and Stratton, 1941.

A rather neat manual on the theory and practice of shock therapy in the psychoses. The book is not intended for the general practitioner because, in the first place, the treatment requires facilities available only in mental hospitals.

The way 'shock' works and its value as a therapeutic procedure are matters of controversy. Certainly, psychiatrists have not always been objective in computing results. Many, especially young psychotics, recover spontaneously. An experienced psychiatrist can predict with a fair degree of accuracy which cases will recover or improve. Subjecting selected cases to shock therapy will naturally give a percentage of recoveries.

It is striking that so few psychiatrists reporting on shock therapy have considered the psychologic factors involved. This type of therapy has special appeal to the mechanist. One may muse, too, over the coincidence that all forms of shock treatment have originated in Axis countries—a sort of

Blitzkrieg psychology. Certainly insulin, metrazol and electricity are more refined than previous vogues in psychiatry, such as partial drowning, the Drehstuhl, partial evisceration, and other treatments.

A. M. G.

How to Prevent Goiter. By Israel Bram, M. D., Medical Director, Bram Institute for Goiter and Other Glandular Diseases; formerly Instructor in Clinical Medicine, Jefferson Medical College, Philadelphia; Fellow of the American Medical Association, etc. Cloth. Price, \$2.00. Pp. 182. New York: E. P. Dutton and Company, 1941.

This monograph, written for the layman, deals with the relation of the thyroid gland to the various processes of life in health and disease. In addition, the various types of goiter—endemic, tumorous and exophthalmic—are discussed from the etiologic, therapeutic and, especially, preventive points of view. The author shows how these preventive measures may be utilized successfully. For example, he discusses the relation of the thyroid gland to eating, sleeping and thinking. He tells not only what to eat but also the proper quantity. As for sleep, he suggests the general rule that the quantity of sleep required is directly proportional to the amount of daily physical exertion and inversely proportional to the mental activity. The depth of sleep is far more important than the amount as far as being refreshed on arising is concerned.

Bram brings out a most illuminating point when he states that in toxic adenomatous goiter it is the thyroid gland which makes the body sick while in the exophthalmic goiter it is the body which makes the thyroid sick. Because of the complexity of our lives, many individuals are ill-adapted to their environments and, having the predisposition toward thyroid disease, develop the exophthalmic type of goiter. Such environmental factors as excitement, fear, sorrow and anger or financial, family or sexual maladjustment may bring about the actual appearance of the disease.

Bram does not approve of the surgical treatment of exophthalmic disease. He feels, as do many conservative physicians, that only after medical measures have failed should surgery be considered, since the tumor occurs as a result and not as a cause of the condition. In the medical treatment the patient must be taught a new mode of living if success is to be attained.

H. J. C.

Surgical Practice of the Lahey Clinic. By Frank H. Lahey, M. D., and Members of the Staff of the Lahey Clinic, Boston. Cloth. Price, \$10.00. Pp. 897 with 376 illustrations. Philadelphia: W. B. Saunders Company, 1941.

This volume is in reality a collection of surgical subjects and various phases of surgical technique published during the past four years by members of the staff of the Lahey Clinic. It represents a true cross-section of the Lahey Clinic work as practiced today, and it is the product of the actual experiences of clinic members with a large amount of material. Members of the various departments of the clinic have contributed papers

to those sections of the book dealing with their particular field of surgery. This is not a textbook for students or internes, but rather a volume which should be of most value to the practicing surgeon, since it clearly presents the modern concepts of management of a variety of surgical conditions. The illustrations are abundant and excellent and the technical details of many operative procedures are clearly shown in serial drawings and diagrams.

The management of the important surgical conditions of practically every system of the body is covered, with the thyroid gland and the gastrointestinal tract receiving particular emphasis. The paper discussing the management of the so-called "thyrocardiac" and several papers dealing with the operative technique of thyroidectomy deserve special mention. There is also an excellent paper on the pathology and surgical treatment of carcinoma of the thyroid gland. Subtotal gastrectomy for peptic ulcer is advocated as being superior to the more conservative procedures of gastroenterostomy or pyloroplasty. The authors of this paper state that there have been fewer recurrent ulcers and less postoperative digestive difficulty with the use of the more radical procedure. Many valuable points are brought out in the paper dealing with the diagnosis and surgical treatment of abdominal fistulas, and several interesting case reports are given. The papers dealing with the diagnosis and treatment of carcinoma of the colon and rectum should appeal to the surgeon who is particularly interested in colonic surgery. The proctologist as well as the surgeon should find much of value in the papers dealing with the treatment of hemorrhoids and pruritus ani.

Carcinoma of the uterine cervix and the techniques of vaginal hysterectomy and of closure of vesico-vaginal fistula are discussed in the section on gynecology. In the section on urology, the technique of transurethral prostatectomy is described in detail and there are two papers dealing with partial resection of the kidney in various conditions. The section on orthopedics contains papers on several important subjects, including the effective treatment of sciatic pain and the treatment of malunited Pott's fractures.

Considerable space is given to the papers dealing with the diagnosis and treatment of various neurosurgical conditions. There is an excellent discussion on the subject of chronic subdural hematoma, and treatment of meningiomas of the brain is described in two papers. Of particular importance at the present time is the paper dealing with the treatment of gunshot wounds of the brain. Adequate debridement of all devitalized brain tissues by electrosurgical means is stressed.

Last, but by no means least, there is a section of this volume devoted to anesthesia. Papers discussing the use of cyclopropane, the choice of anesthesia for upper abdominal operations, and various important features relative to spinal anesthesia are included. An important paper in this last section of the book deals with the prevention and treatment of postoperative pulmonary complications. The relationship of atelectasis to the development of postoperative pneumonia is emphasized.

This volume should be a welcome addition to the surgeon's library since it contains many of the most worthwhile recent contributions to our surgical literature. It should be valuable for reference, both from the standpoint of the quantity and quality of material presented.

F. M. T.

Diseases of Women. By Harry Sturgeon Crossen, M. D., F. A. C. S., Professor Emeritus of Clinical Gynecology, Washington University School of Medicine; Gynecologist to the Barnes Hospital, St. Louis Maternity Hospital, and St. Luke's Hospital; Consulting Gynecologist to De Paul Hospital and the Jewish Hospital; Fellow of the American Gynecological Society and of the Central Association of Obstetricians and Gynecologists; and Robert James Crossen, A. B., M. D., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine; Assistant Gynecologist and Obstetrician to the Barnes Hospital and the St. Louis Maternity Hospital; Assistant Gynecologist to the St. Louis Children's Hospital; Gynecologist and Obstetrician to St. Luke's Hospital and to De Paul Hospital; Fellow of the Central Association of Obstetricians and Gynecologists; Diplomate of American Board of Obstetrics and Gynecology. Cloth. Price, \$12.50. Pp. 948, with 1,127 illustrations, including 30 color plates. St. Louis, Mo.: The C. V. Mosby Company, 1941.

It is fortunate that this well-written textbook has been revised at regular intervals and thereby kept up with advances in the field of gynecology. These revisions make it one of the best treatises on the subject.

In recent years, most of the advances in gynecology have been in physiology, especially as it pertains to endocrinology. In the previous edition (the eighth), there was a very commendable didactic presentation of endocrine physiology and its application to diagnosis and therapeutics. In the present edition the sections of the book pertaining to endocrinology and the associated physiology of menstruation have been revised to include the vast amount of material that has been in the literature in the last several years. This has been very well summarized and presented in an easily understandable form.

There is a table of the many commercial endocrine preparations, including stilbestrol, which will help to straighten out the confusion for the practitioner who has to deal with an array of proprietary names. A well organized diagnostic treatment program is outlined for the conditions which respond to endocrine therapy, such as metrorrhagia, menorrhagia, dysmenorrhea, and other conditions of endocrine dysfunction.

The excellent and complete chapter on gynecologic examination and diagnosis is much the same except for the inclusion of the newer laboratory procedures. There is also a chapter on gynecologic treatment measures.

A large part of the text presents the various aspects of gynecologic diseases. This part of the book is systematic and easily understandable and includes recent additions to therapy, such as the treatment of gonorrhea, metritis, lymphogranuloma and other diseases with the sulfonamide drugs.

The confusing pathology of ovarian neoplasms, which includes the granulosa cell tumor, arrhenoblastoma, Brenner cell tumor, and many other rare and also more common ovarian tumors, is clarified by a systematic classification and ample discussion of each type of tumor.

Other parts of the book discuss preoperative and postoperative care and the medicolegal aspects of gynecology. A large and complete bibliography is included. This volume does not discuss the various operative techniques which are presented in another volume "Operative Gynecology," by the same authors.

This is one of the best of gynecologic textbooks and can be recommended for the medical student, for the busy practitioner or specialist as an easily understandable and ready reference, or for the specialist who wishes to review the field of gynecology for his board examinations.

H. W. C.

The Treatment of Infantile Paralysis in the Acute Stage. By Elizabeth Kenny. Cloth. Price, \$3.50. Pp. 285 with 72 illustrations. Minneapolis & St. Paul: Bruce Publishing Company, 1941.

Miss Kenny presents her arguments that in infantile paralysis spasm is the main symptom and is the factor responsible for most of the damage. Spasm is unquestionably present in many of the acute cases and the hot wet dressings developed by Miss Kenny will aid in the reduction of this spasm and simultaneously in the relief of pain and in the recovery of the patient. It is believed that a real advance in the treatment of acute poliomyelitis has been made but it is difficult to accept *in toto* the condemnation of splints and braces. Probably a happy medium in treatment will employ both methods of treatment—fomentation in the early acute phases, with splints and braces for those who need them. Respirators cannot yet be relegated to other disabilities.

The book is not particularly clearly written and there is much repetition of the material. Miss Kenny, however, has made a real contribution to the treatment of a disease which has not been easy to treat.

D. G. G.

The Public Health Nurse and Her Patient. By Ruth Gilbert, R. N., Supervisor of Social Work, Psychiatric Service in the Community, New Haven; formerly Mental Health Supervisor, Visiting Nurse Association, Hartford. Cloth. Price, \$2.25. Pp. 396. New York: The Commonwealth Fund, 1941.

In publishing the book, the Commonwealth Fund not only maintains its high standards but has made a valuable contribution. The author, Ruth Gilbert, is especially well qualified as she is an outstanding figure in the field of public health nursing and social work—a rare combination.

Miss Gilbert tells in clear cogent language how the public health worker, utilizing her favorable position, can greatly increase the value and effectiveness of public health work. Dr. Parran is quite right in saying "The brunt of this work falls on the nurse."

The theme of Miss Gilbert's book is that the nurse must consider people and not cases. Of course, the nurse likes people or she wouldn't have chosen nursing. Understanding people and working effectively with them requires some special knowledge of human relationships as well as commonsense. Naturally, Miss Gilbert doesn't

imply that this can be learned from a book; on the contrary, she stresses the value of experience.

The book is a systematically and well thought out treatise on practical medical psychology. The nurse will not be befuddled by technical verbiage, but she will be forced to consider facts in carrying out her work.

The contents include a chapter on Nursing the Sick Patient in which the nurse's attitude to bedside nursing, the patient's attitude toward illness and toward physical defects and injuries, mental defect and disease are discussed. The chapters, Teaching Health, Nurse and Maternity Patient, The Child in His Family, are very good and should help the nurse to greater insight and understanding.

The final chapter entitled, Relationships with Co-Workers takes up some very important matters of relationships between nurses in the same organization and also the matter of interagency relationships. After reading what Miss Gilbert has to say, the nurse would realize, for instance, that social work is more than a Lady Bountiful giving handouts to the underprivileged. In turn, the social worker would appreciate what the health nurse is trying to do.

Nurses and social workers will enjoy *The Public Health Nurse and Her Patient* and give them greater insight in dealing with people. A very fine course for public health nurses in training could be built around this book. It would be a very good way of extending a mental hygiene program. A carefully selected bibliography furnishes a guide for more extensive reading. A good index completes this excellent book.

A. M. G.

The Psychology of Dealing With People. By Wendell White, Ph. D., University of Minnesota. Revised and Reset. Cloth. Price, \$2.50. Pp. 268. New York: The Macmillan Company, 1941.

A rather interesting book for the general reader on the psychology of dealing with people. It is certainly true that many many people don't know how to deal with others or even themselves. The question is, Can one get the requisite knowledge from a book? The reviewer thinks not.

Dr. White has given much thought to the personal interrelationship, is a good observer and offers much sensible advice. As far as personal self-help is concerned, pardon the cliché, can one pull oneself up by his bootstraps? The author, like many others, puts too much emphasis on the appeal-to-reason approach. On a surface level, Dr. White's observations are astute. Part I (the book is divided into four parts), *Dealing with People in Life Situations in General*, contains much good advice, but no deep insight into human behavior. This is by far the best section of the book. The other parts, *Preventing Mental Abnormality* and *Further Mental Health*, are too superficial.

While this book offers little to the physician, it is a good commonsense and harmless (not all books on psychology are harmless) book on practical psychology to recommend to the laity.

A. M. G.

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RESPIRATORY OBSTRUCTION*

By

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In discussing respiratory obstruction it is convenient to divide the respiratory tract into two sections: the upper respiratory tract, composed of the nose, nasopharynx and pharynx; and the lower respiratory tract, composed of the larynx, trachea and bronchi.

Beginning anteriorly and progressing backward through the upper respiratory tract, the chief anatomic and structural factors causing obstruction are atresia of the nares, deflection of the nasal septum, hypertrophy of the mucosa on the inferior turbinates, and atresia of the posterior choanae. Pathologic entities involving this area include foreign bodies, polypi, neoplasms, and the ulcer-granulomatous lesions of tuberculosis, syphilis and rhinoscleroma.

Atresias are treated surgically, whether they be membranous or bony. Deflections of the nasal septum, whether cartilaginous, bony or a combination of the two, are treated surgically. Nasal polypi are most easily removed with the aid of a snare, and, if due to chronic irritation from a suppurative sinusitis, the offending sinuses should be operated upon at the same time. The choanal polyp invariably arises in one of the maxillary sinuses. It grows out through the natural orifice of the sinus into the nasal cavity, then backward through the nasopharynx to present itself in the pharynx. Its treatment is surgical. The stalk is first severed at the orifice of the maxillary sinus and the growth is then withdrawn through the pharynx. This is followed, at the same operation, by a radical antrum operative procedure so that

its base may be removed. Hypertrophy of the mucosa overlying the bony inferior turbinates may be so extensive as to cause severe nasal obstruction. If this tissue shrinks readily when one of the commonly used vasoconstrictor substances is applied to its surface, it can then be treated successfully by submucous electrocoagulation. If it does not shrink readily under a vasoconstrictor, it is best treated by surgical excision. A carcinoma or sarcoma arising in the sinuses and presenting itself in the nose is best treated by radium. The ulcero-granulomatous obstructions caused by tuberculosis are best treated by cauterization and the direct application of ultraviolet light. The lesions of syphilis will respond quickly to specific arsenical treatment. Rhinoscleroma is exceedingly resistant to all forms of therapy but makes its most favorable response to roentgen rays. As a rule, foreign bodies can be readily seen on speculum examination and are removed with small grasping forceps. In the case of a resistant rhinolith, one may have to use a larger instrument with strong crushing jaws to facilitate its removal. The diagnosis of the above mentioned lesions can usually be made on inspection, except in cases of new growth and ulcero-granulomatous lesions. In the latter, it is essential to obtain tissue for microscopic examination before instituting treatment. I might add that the use of the electric nasopharyngoscope is of inestimable value in the diagnosis of posterior and nasopharyngeal lesions.

The chief cause of respiratory obstruction in the nasopharynx is hypertrophy of the nasopharyngeal lymphoid tissue. This is always present in large quantity in children until the age of puberty, and is also found far more frequently in adults than is generally realized. The nasopharyngoscope is of great value in the diagnosis of this condition as it affords an excellent view of the

*Read before the Association in annual session, Mobile, April 15, 1941.

tissue as well as all the structures in this region. The lymphoid obstructions are best removed with a curette. Remnants of lymphoid tissue in the nasopharynx, following surgical removal of the mass of tissue, can be treated most successfully with radium.

New growths of the nasopharynx, in order of frequency, are lymphosarcoma, fibroma and carcinoma. Lymphosarcoma will disappear as if by magic when treated with radium. Unfortunately, in a high percentage of cases, the growth will rapidly metastasize to the lung. Fibroma of the nasopharynx is best treated with radium, for when removed by curettage severe and often fatal hemorrhage may occur. Carcinoma of the nasopharynx, as elsewhere in the upper respiratory tract, is best treated with roentgen rays.

In the pharynx the commonest cause of respiratory obstruction in children is retropharyngeal abscess. The simple retropharyngeal abscess results from a suppurative process involving the lateral retropharyngeal lymph gland or glands which are located in the peripharyngeal space. This condition is diagnosed upon inspection and palpation, and is treated by incision and drainage. Unilateral peritonsillar abscess may cause a moderate degree of respiratory obstruction, and bilateral peritonsillar abscess will cause severe respiratory embarrassment. Carcinoma of the tonsil or of the base of the tongue will often cause respiratory obstruction. It is diagnosed by inspection and biopsy. It is best treated with roentgen rays.

Foreign bodies, abductor paralysis of the vocal cords, acute infections, angioneurotic edema, and new growths are the commonest causes of laryngeal obstruction. Any of these conditions can be readily diagnosed by indirect laryngoscopy when one is able to obtain sufficient cooperation on the part of the patient. Foreign bodies can be removed by direct laryngoscopy and grasping forceps. Several operations have been advocated for the cure of abductor paralysis of the vocal cords, and good results have been obtained by a few surgeons. It is an operation, however, not to be undertaken unless one is thoroughly familiar with the anatomy of the larynx. Acute infections of the larynx are treated by complete vocal rest, steam inhalations, and sulfanilamide therapy where indicated. A diphtheritic membrane can cause severe respiratory obstruction, but fortunately is rarely seen today. Ulcerations

due to tuberculosis can be treated by the direct application of 30 per cent silver nitrate and direct exposure to ultraviolet light. Syphilitic lesions are treated by the administration of intravenous arsenicals. An acute attack of angioneurotic edema can usually be successfully combated with adrenalin, and future attacks may be eliminated by withholding the offending causative factor, if it can be ascertained. New growths of the larynx may be benign or malignant. The commonest benign lesions are papilloma and fibroma or "singers' nodes." The juvenile papilloma is best treated by spraying the larynx twice weekly with the estrogenic substance called amniotin. Under this form of therapy the papillomatous lesions will usually disappear in six months. It may be necessary, however, for the patient to wear a tracheotomy tube during the early part of the treatment. Fibromas are successfully removed with a cupped biopsy forceps under direct laryngoscopy. The chief malignant lesion of the larynx is the squamous cell carcinoma. When this lesion is located in the middle third of one cord, and when fixation of the arytenoid cartilage has not taken place, the operation of choice is laryngofissure or hemilaryngectomy. If this lesion is located in the posterior third of the cord, the anterior third of the cord, or if involving both vocal cords, the operation of choice is total laryngectomy.

Tracheal obstruction may be caused by a new growth or foreign body within the tracheal lumen; or may be caused by external compression of the trachea in the presence of aneurysm, enlarged thyroid gland, enlarged mediastinal glands, as in Hodgkin's disease, or by a large growth or large foreign body in the upper end of the esophagus. The bronchoscope is essential for the treatment of such cases. When a carcinoma is encroaching upon the lumen of the trachea, an insulated wire applicator can be passed down through the bronchoscope and the growth treated by fulguration. Enlarged mediastinal glands are best treated with deep x-ray therapy.

In the bronchi, as in the trachea, the chief causes of respiratory obstruction are foreign bodies, new growths, edema and membranes formed during the course of an acute laryngotracheobronchitis, tuberculous ulcerations and granulations, and the lesions caused by fungus infections. Here again the

bronchoscope is of great value in the diagnosis and treatment of all these lesions. Bronchoscopy enables one to take cultures and to use direct suction in cases of acute laryngotracheobronchitis and in fungus infections; to apply 30 per cent silver nitrate to the ulcerations and granulations caused by tuberculosis; and to obtain a view of the exact location and to remove a piece of tissue for microscopic study in case of a neoplasm. The latter is of primary importance to the thoracic surgeon as it will tell him exactly what sort of a tumor he is dealing with and will influence his decision as to whether or not a pneumonectomy can be performed.

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THE EPIDEMIOLOGY OF ACUTE ANTERIOR POLIOMYELITIS*

By

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Poliomyelitis, or infantile paralysis, is an acute communicable disease due to a filtrable virus. This virus attacks the nervous system and has a tendency to localize in the anterior horn cells of the gray matter of the spinal cord. Although the disease is low in incidence as compared with some of the other communicable diseases, it commands tremendous importance, and deserves top ranking as a terrifier of the public due to the visible deformities and residual complications which it leaves in its wake. It occurs in both sporadic and epidemic form. The incubation period is thought to be from seven to fourteen days.

The disease is sudden in onset. The cardinal symptoms are headache, nervousness and irritability, and stiffness of the neck and back. There is often a sore throat, and gastro-intestinal upset is common. Paralysis is said to occur in approximately forty per cent of the cases, and it is generally conceded that many abortive and non-paralytic cases escape detection.

The most commonly accepted classification of poliomyelitis is that of Wickman, and is as follows: The spinal type, the type resembling Landry's paralysis, the bulbar

type, the encephalitic type, the ataxic type, the polyneuritic type, the meningitic type, and the abortive type. This classification is of historical interest only, however, in that a case of the disease is seldom seen that limits itself to one type. A more practical classification would seem to be: abortive, non-paralytic, and paralytic types. When paralysis does occur, the amount and location of the paralysis depend on the site of attack on the spinal cord, and the severity of the infection.

One of the most interesting aspects of poliomyelitis is its epidemiology. It also happens to be an aspect about which very little is known, and while no attempt will be made to answer all the questions as to why the disease, in its epidemic form, behaves as it does, a brief review of some of the literature on the subject seems pertinent.

Historically, poliomyelitis is a disease of antiquity, but the disease in its present epidemic form is of fairly recent origin. For a number of years during the latter part of the nineteenth century outbreaks of the disease occurred in the Scandinavian countries and seem to have been limited to these countries until 1905 when a pandemic began in Sweden and Norway, spreading to this country where an epidemic occurred in New York in 1907. From that time there has been a marked increase in the disease, an increase too great to be explained by better diagnostic methods, which undoubtedly did develop. Epidemics occurred in the United States in 1916, 1921, 1925, 1928, 1931, 1934, 1935, 1937 and 1939. In Alabama the most severe recorded outbreaks occurred in 1936 and in 1941, this last one having been general over most of the southeastern states. From January through September, 1941, Alabama reported 735 cases, Tennessee 240, Florida 235, and Georgia 661.

It is frequently pointed out in the literature that poliomyelitis shows very little tendency to spread in a household. Many early instances are recorded where more than one member of a household came down with the disease, but in most of these the patients all became ill simultaneously, indicating a common source of infection rather than that secondary cases actually developed. However, as the fact became known that many non-paralytic cases occurred, and as diagnostic acumen became more marked, students of the disease found that true instances of sec-

*Read before the Northeastern Division of the Association, Oneonta, October 9, 1941.

ondary infection were fairly common. Upon the establishment of this fact it soon became evident that poliomyelitis is infectious.

The disease is one of childhood, with 50 per cent of all cases occurring in children under five and 80 per cent in those under ten years of age. Adults do contract the disease but it is uncommon in those over forty.

Although poliomyelitis is more prevalent in portions of the country with cold climates, it is a warm weather disease in that by far the greatest number of cases occur during the summer months. Until recent years the great majority of cases in the United States occurred in the northern and northeastern states. Now, however, we find most of the Southern States are from time to time having more or less severe outbreaks. Perhaps the greatest single factor in this change of locale is the increased ease and rapidity with which we may travel from one part of the country to the other. Gone is the day when a trip to New York or other distant state is considered a long journey. Instead of a matter of days, it is now a matter of hours. With this rapidity of travel has disappeared the possibility that an infectious disease can be limited to any one part of the country.

The experimental transmission in 1909 of poliomyelitis to the rhesus monkey opened up fields of investigation far beyond those possible through the study of clinical cases alone. The symptomatology and pathologic anatomy of the experimental infection were found to be similar to those of the human disease. Through this type of experimentation it was soon demonstrated that the disease is caused by a filtrable virus. It was also determined that the virus enters the nervous system through the olfactory nerves, and the idea that all infections were by this route became popular. Recently it has been shown that the infection may also enter by way of the intestinal tract.

Certain peculiarities in the spread of poliomyelitis lead some investigators to develop the theory that the infection might be spread by certain insects or other intermediate hosts. There are investigators who still hold to this idea, with excellent arguments to support their views. Recently, the press has publicized the idea that the disease may be spread by rats. So far as I can learn from the literature this idea is without foundation, and exists largely in the minds of the laity. The thought probably originated from

the recent work done by Armstrong in which he was able to transmit successfully the Lansing strain of virus to the cottonfield rat. By doing this he hoped he had found a cheaper and more plentiful experimental animal, but subsequent results have been disappointing, and it is now believed that rats are not suitable as experimental animals, and that the disease does not exist in rats in nature. This work by Armstrong did give emphasis to the fact that many different strains of the virus exist, and that the virulence of the virus is subject to variation.

One of the most important pieces of investigative work done recently is that of Paul and Trask, reported in the February issue of the Journal of the American Medical Association. They showed rather conclusively that the virus could be recovered from the sewage in areas where the disease is prevalent. They also substantiated the fact that virus capable of producing experimental paralysis could be recovered from the stools, not only of frank cases of the disease but also from those who had never had the disease in a recognizable form. Although the claims of these investigators are modest, it seems that their line of investigation is sure to throw more light on the epidemiology of the disease.

The work of various other investigators indicates the probability of widespread infection with the virus during an epidemic, the result of which is a preponderant sub-clinical immunity which is accomplished with greater rapidity in urban than in rural areas. This would account for the fact that the disease shows a greater incidence in rural areas, and that older age groups are attacked in rural areas than in cities.

It seems fairly evident that the virus may enter either through the nasopharynx or the intestinal tract. Also, that it may leave the body by means of the secretions of the nose and mouth, or with the intestinal discharges. The part played by the three Fs—filth, flies and fomites—in the transmission of the disease is being actively investigated. The results of this investigation are being watched with a great deal of interest, as they will likely throw much light on the method of spread of this disease.

The epidemic of poliomyelitis through which we have just passed in Alabama has been the most severe on record. The increase in the case rate began the week of

July 12th and reached its peak the week of August 9th. The decrease in the case rate was equally as sharp, and leveled off the week of September 13th. Approximately 750 cases were reported, and there were 40 deaths. Slightly more than two-thirds of the cases were in children under five, and four-fifths in children under ten.

It is safe to predict that, as has been the case with other communicable diseases, with complete knowledge concerning the epidemiology of poliomyelitis will come successful methods of control.

INFANT FEEDING*

PRINCIPLES AND PROBLEMS IN GENERAL PRACTICE

By

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Infant feeding is a rather difficult problem for most general practitioners. This is probably due to the fact that schools of medicine give a very limited time to pediatrics, and only a small percentage of time is devoted to infant feeding. Consequently, we who are in general practice have difficulty in taking care of the normal infant, and this is made doubly difficult when we do not have pediatricians in our towns for consultation. Therefore, it is the aim of this paper to review the principles of infant feeding with some hope of simplifying the problem.

In the feeding of infants there is no fundamental difference from the principles governing the feeding of adults. The basic one is that the infant's digestive system is very sensitive and requires several months to acclimate itself to the varied diets required to maintain good nutrition while the infant grows into an adult. The aim of infant feeding is to supply a diet which will be adequate for growth, nutrition and normal development. For this to be done it is always best to know something of the previous nutrition of the child. Consequently, the feeding of infants begins in the prenatal period, at which time a well-balanced diet is given the mother to meet her nutritional needs and to enable her to have an adequate supply of nourishment for the child also. It is during

this period that the growth of the child is most rapid, and for that reason it is very important for the mother to have good nutrition so that she may have a well nourished child at birth.

After the fetus becomes a new born baby, it begins to receive our attention as a separate individual. We always hope that nature has made mother's breast milk available, and of sufficient quantity and of such quality that it will maintain the nutrition of the child. This is not always the case, so it may be necessary to provide partially or completely some substitute for breast milk. This is usually done with some modification of cow's milk.

Whole cow's milk contains 3.50 per cent protein, 4.75 per cent carbohydrate and 3.50 per cent fats; while breast milk contains 1.25 per cent protein, 7.50 per cent carbohydrate and 3.50 per cent fats. So the cow's milk is modified to approach breast milk as near as possible. Cow's milk is low in carbohydrate so some form of carbohydrate is added. I think it makes little difference which is used. This is added with the idea of making the sugar content nearer the percentage of that in breast milk. The milk is then diluted at the beginning to bring the percentage nearer to that which prevails in breast milk, and also to dilute the fat. It seems that the fat in cow's milk cannot be handled as well by the infant as that in breast milk even though the percentage in both is about the same. I think this has been rather definitely proven by the fact that premature infants have less digestive disturbances on fat-free or skimmed milk than on any other type of artificial feeding. Normally, an adult experiences some difficulty in digesting fats, so it seems logical that an infant, who has a very sensitive digestive system, would have even more trouble doing so.

A milk diet seems ample for infants until they are 3 or 4 months of age. However, there are other essentials necessary for good nutrition, whether the infant is breast fed or on a bottle. Vitamins A and D are supplied in certain amounts by breast milk but are inadequate in formulae. Therefore, cod liver oil or some of its concentrates should be added to insure sufficient amounts of these vitamins, and this should be done within the first week. There should also be added, within the first month, orange juice,

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tomato juice or some source of vitamin C in adequate amounts.

Usually milk, cod liver oil and orange juice will maintain the nutrition of the child until he is about 3 or 4 months of age at which time he is usually taking about one quart of milk a day. Then we should add semisolid foods, such as cereals and stewed fruits, to the diet; and then gradually add more solids until by the time he is 8 or 10 months old he is taking cereals, eggs, vegetables and scraped meats. He has then acclimated himself to the diet he will continue throughout life. As these other foods are added to the diet the sugar is gradually removed from the milk; and, as the child eats more, milk plays a less important part in the diet. These principles of infant feeding will usually maintain the nutrition of a normal child, provided the diet is of sufficient quantity to furnish between 40 and 50 calories per pound of body weight for the first year. However, if the child develops some disease or is allergic, then the problem is different.

In the so-called colic of infants, the distress is usually due to an insufficient diet, or the child is allergic. By that I mean gastro-intestinal allergy—the infant who gains and develops rapidly but frets most of the time, frequently has several loose stools a day and occasionally vomits. This is one of our most common problems and is one we usually have difficulty in controlling because we fail to recognize the cause. This condition can often be controlled very simply, sometimes dramatically, by changing from a whole milk to a butter milk or goat's milk diet. If the infant is put on butter milk, he can ordinarily be returned to whole milk after a few weeks for in that time he will usually have desensitized himself. He should be put on whole milk or goat's milk to maintain a balance between the proteins, carbohydrates and fats.

In disease the infant's digestive system is usually sensitive and therefore his diet should be limited, and, since fats are most difficult to digest, it seems that infants do better if given a fat free diet; that is, butter milk or skimmed milk should replace the whole milk. However, the most important part of the diet in disease is the fluid and the fluid balance should be maintained as near normal as possible.

Another problem which is very common in infant feeding is that of constipation. This

is seen most commonly in children on a milk diet and the condition is due to the fact that the child is almost completely absorbing its food and has no residue to be excreted. This is usually best corrected by adding more food to the diet, preferably stewed fruits. These fruits can be added at any age after the first month without disturbing the digestion of the child. It is almost never necessary to give children laxatives to control constipation.

In concluding, I should like to emphasize the fact that infant feeding begins in the prenatal period. Basically, infant feeding is the same as that of adults, but the infant has a more sensitive digestive system which requires time to adjust itself to various foods. Colic found in infants is often due to allergy. In disease the infant does better on a diet low in fats, and the fluid balance should be maintained as near normal as possible.

ACUTE INDIGESTION*

By

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Acute indigestion is a layman's term of indefinite and variable significance, but associated in the public mind with ominous and portentous possibilities and fear of sudden death. While diagnostically inclined friends, family, newspapers and even doctors sometime may place everything from a neurogenic upset of the vagal or sympathetic nervous system on through the gamut of acute abdominal emergencies in this category, the condition that has given the unsavory reputation to this terminology is without doubt coronary disease with its frequently calamitous termination.

I am therefore going to violate the letter but not the spirit of this topic and invite your interest to the subject of angina pectoris and coronary occlusion, with particular reference to the possibility of confusing these entities with various abdominal conditions.

The marked relative and actual increase of coronary disease in recent years, and the strong probability of its occurrence with

*Read before a meeting of the Northwestern Division of the Association, Moulton, June 26, 1941.

greater frequency in the future makes this a timely topic.

The primary mechanism in the initiation of symptoms in this group of cases is myocardial ischemia. The heart muscle does not get the necessary blood supply and there is cardiac pain. When this circulatory deficit is temporary, either through spasm of the coronary arteries or through an increased heart load, such as physical exertion or a combination of these, we have the syndrome of angina pectoris; and, as might be expected, when this load is removed by cessation of activity and the spasm is relaxed by nitroglycerine, the pain disappears at once. When the pathology in the coronaries becomes sufficiently advanced so that the lumen of one of the branches is greatly constricted or blocked entirely, then myocardial infarction occurs and we have the syndrome of coronary occlusion, in which the pain persists for hours and days.

Thus the pain of angina pectoris lasts but a few minutes, rarely 15 and practically never more than 30 minutes, and this is the prime differential point in distinguishing it from infarction. In many cases this is the only symptomatic difference. From the standpoint of therapy and prognosis, this is a most important differentiation to make.

While the diagnosis can be made over the phone in the classical case of coronary disease exhibiting violent substernal pain radiating down the left arm, there occur many attacks in which the symptoms are confusing, often mild and the ingenuity of the attending physician is taxed to the utmost. All too often the true significance of the subjective complaints are regarded as arising from a neurosis, neuritis or functional digestive disturbance. The layman and the physician often attribute the disagreeable sensation to gas and indigestion which, if the patient subjects the doctor to the embarrassment of suddenly expiring, becomes acute. In many of these cases, the pain is not severe and there may be very little shock or fear experienced. A list of symptoms encountered in this type of patient, compiled by Levine and published in his recent book, places the problem before us rather clearly. Some of them are as follows: "Peculiar pain in the chest frequently not described as pain but as a disagreeable feeling, such as heart burn, often associated with and somewhat relieved by belching of gas. Feeling of tight-

ness in lower chest and upper abdomen, burning sensation, feeling of fullness. One man complained that he had a sensation as if his clothes were too tight and had a desire to tear them apart." From this list, it is easy to realize how difficult some of these cases can be and how a few may escape the keenest clinical analysis.

While the location of the sensation is often substernal and radiates down the left arm, in atypical cases it may originate anywhere from the epigastrium to the root of the neck. It may be entirely abdominal, it may be entirely in the shoulders, arms or wrists with no chest pain, or it may begin peripherally and radiate to the chest.

Only in the past few days I was called to see a man of 70 years, who had been up and around, complaining of substernal burning; as he expressed it, the worst heart burn he had ever had in his life and a heavy tired feeling in both arms. He had been plied with Tums and other antacids by the local druggists and I believe had seen at least one physician with the same result. I probably was lucky in seeing him after he had collapsed and the diagnosis was obvious.

I would like to give a brief report of a few more cases to illustrate my point:

H., age 63, male, normal cardiogram. This rather neurotic patient has had functional digestive distress for years and intermittently worries about his heart.

E. J., age 47, female. Inverted T wave in Lead 4: a few days later, inverted T wave in Lead 1 and more marked inversion in Lead 4. Diaphasic in Lead 2. Definite coronary occlusion. This patient described to me at a social function (you know how you like to discuss such things at social functions) a peculiar spell she had had that day which had been called nervousness and indigestion by her doctor. Since the patient and the doctor were both good friends of mine, I called up and suggested that he let me run a cardiogram with the above result.

M. C. L., 39, male. Inverted T wave in Lead 1. Depression ST interval in Lead 3. Elevation ST interval in Lead 4. This man came in for regulation of his diabetes and stated that he certainly had had a bad indigestion for the past three days.

P. B. H., age 65, male. Slight elevation of ST interval in Lead 1, marked in Lead 4. This man still doesn't believe he has any heart trouble—just indigestion!

P. C. D., age 47, male. Inverted T wave in Lead 3; a few days later more marked inversion in Lead 3 and inverted in Lead 2. This man walked up two flights of steps to tell me what bad indigestion he had developed.

Well, it might be fair to ask, now that such a confusing picture has been built up, what

are we going to do about it? How are we going to sharpen our diagnostic acumen in these cases? Probably the most important thing is to have an acute awareness of the possibilities, especially in people past 40 and in diabetics of any age. One might say: Be heart conscious! Then, one might perhaps take sufficient time out of a busy day to delve more closely into these vague complaints.

It is axiomatic that a careful history is of paramount importance. Even the family history may give a lead; as, of course, we all know that there is a strong hereditary trend in cardiovascular disease. A history of prolonged digestive distress will of course make us feel less suspicious of coronary origin, while suddenly developing distress in a patient past middle age, who has always been strong and healthy and boasts of never going to doctors, should at once raise the question in our minds.

A history of having had hypertension is sometimes important, especially if the systolic pressure is quite low at the time of examination.

Many of the symptoms have been mentioned already in this discussion. In primary angina pectoris, the incidence of pain or distress of any kind on exercise, such as walking, especially against a wind or up hill or with a full stomach, should be given due significance. Cessation of discomfort on rest will prove important.

In cases of distressing sensations prolonged for hours or days, suggesting coronary occlusion, resort to laboratory procedures, and an electrocardiogram will prove very informative.

Physical examination should be very carefully conducted and in coronary occlusion may give some clues, such as marked hypotension or marked reduction in usual individual pressure, suddenly developing premature beats and, in about 10 per cent of cases, pericardial friction rub. Most of the time in angina pectoris and many times in occlusion, however, the physical examination will be entirely negative and one should not be willing to risk a diagnosis on this alone.

In occlusion, the following laboratory findings are often confirmative and should always be employed:

Moderate polymorphonucleosis.
Increased sedimentation rate.

Characteristic electrocardiographic changes, particularly in T wave and ST interval.

The mortality rate of coronary occlusion is variable, and the age and sex of the individual wield a potent influence.

Woods and Barnes of the Mayo Clinic, in analyzing a series of 128 cases, found a mean immediate (that is in first 6 weeks) mortality of 46 per cent. Grouped according to age, there was a mortality rate of only 28 per cent before 50 years; from 50 to 60 years 41 per cent; 60 to 70 years 57 per cent; and 70 years or more 84 per cent.

It is interesting to note also that, while the average mortality for men was 41 per cent, that for the women was 75 per cent.

While the purpose of this paper is to call attention to the similarity in symptomatology of various other entities and coronary disease and to stimulate our interest in an earlier and more precise differentiation between them, I believe it would not be amiss to include some additions to the familiar conventional treatment. These changes and additions are suggested by recent carefully controlled and completely authenticated experimental work reported by Leroy and his associates.

Working on dogs and clamping off various branches of the coronaries, they found that not only the area supplied by the occluded branch became ischemic but the whole myocardium exhibited this phenomenon, and that soon ventricular premature beats began to appear. Then, in the dogs that died, ventricular fibrillation ensued. These investigators concluded that the complete myocardial ischemia observed in all cases was due to a reflex vagal vasoconstriction somewhat in the same fashion as the events which ensue when an artery in one of the extremities is occluded.

In experimental therapy directed toward overcoming this and increasing the survival rate of his animals, Leroy found atropine in large doses most effective. He also found a rather high mortality in animals receiving morphine and low in those receiving large doses of nembutal.

Barnes and his group found that 10 per cent of their immediate mortality (that is, the first 6 weeks) was caused by massive pulmonary embolism arising not from mural thrombi in the heart but thrombi from the iliac vessels. It is very likely that this and

other experimental work will alter somewhat our notions concerning treatment, and we should consider adding, to the usual therapy of prolonged rest and oxygen administration when needed, large doses of atropine (1/50 to 1/75 gr., followed by maintenance doses of 1/100 to 1/150) and the xanthines intravenously (such as aminophyllin, 7½ gr.) for their vasodilating effect. Instead of heroic doses of morphine, minimal doses compatible with pain relief and nembutal as an adjuvant to procure comfort and relaxation should be given. Then add to this, early passive motion and massage of the extremities to prevent thrombosis and subsequent pulmonary embolism. As far as our present knowledge goes, this should meet all the therapeutic indications suggested by the altered physiology.

ALABAMA'S INDUSTRIAL HYGIENE PROGRAM*

By

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Recently one has heard much about industrial hygiene and apparently everyone seems to be all for it. However, on further discussion with those interested, it is soon evident that not too many persons know a great deal about it, and a large number of those whose interests are directed towards industrial hygiene view it only in one or two of its phases and not in all the broad aspects which make up the subject.

The field of industrial hygiene is so broad and the implications of certain phases of it are so far reaching that to remain within the limited time for this paper I have drawn freely from a Digest of Lectures on Industrial Hygiene given at the National Institute of Health for brief, clear-cut and concise phraseology.

The 1930 census reported that Alabama had a gainfully employed population of 1,026,322; also that there were 323,216 persons employed in the following five classifications of industry: extraction of minerals, manufacturing and mechanical industries, transportation and communication, trade,

and domestic and personal service. From our file on industry it is found that, as of July 1, 1941, there were 358,330 persons employed in the state. However, this includes only those individuals working in establishments employing seven or more persons. From the rapid growth of the last few months, it is estimated that if the present rate of growth continues there will be approximately 450,000 persons on these rolls by July 1, 1942.

Federal reports on government contracts let in Alabama from July 1 to September 15, 1941 showed roughly a total of \$21,000,000. This does not include naval contracts nor contracts for army cantonments or the large government owned projects at Huntsville, Anniston, Talladega and Childersburg.

From this it may be seen that Alabama is an industrial state and as such it is fitting and proper that every effort be made to provide proper supervision and educational measures to eliminate the health hazards presented by these industries and industrial processes.

It has been said that "the success of industries depends to a great extent on the health of the workers in them." Hence, it is logical to say that the maintenance of healthful industries is one of the state's first duties. The recognition of this duty is but a recent development. Modern conditions have brought entirely new problems into industrial hygiene. These have come about largely through the development of new industries and the invention of new processes, through the ever-increasing size of factories, through improved and changed methods of transportation, through specialization and crowding in cities and workplaces, through artificial light, through changing relations between capital and labor, the ever-widening social frontier and the intensive and unrelenting pressure of the times. Strides which have been made in the conduct of industry have more than kept pace with the problems of health and safety for the worker, and today there is no doubt that the average worker lives and works under conditions far more conducive to life and health than ever before.

The early history of industrial medicine shows that the chief function of the industrial medical department was the treatment of traumatic injuries. Gradually the work of the medical department began to extend beyond the surgical treatment to the medical

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phases of the problem. Functions such as preemployment and periodic physical examinations, job placement and, recently, the medical and engineering control of occupational diseases began to take their rightful places in industry.

In order to determine when, where, and under what conditions physical and psychologic damage is occurring due to material and emotional handicaps under varying forms of employment, morbidity and mortality statistics are essential.

These basic data necessary for the determination of the extent of ill health caused by different environmental conditions are obtainable from the following reports:

- a. Industrial accidents: reports, cases and deaths.
- b. Occupational disease reports: cases and deaths.
- c. Reports of other occupational diseases not reportable by law.
- d. Reports of excessive frequency of a disease in any occupational or industrial group.
- e. Physical examination data, especially in groups of workers where the employees are exposed to known or suspected hazards.
- f. Reports of surveys on:
 1. environment.
 2. nature of work.
 3. home environment.
 4. socio-economic status.
- g. Laboratory data.
- h. Industrial mortality or, better still, occupational mortality reports.

With the exception of industrial accidents, occasional occupational disease reports and mortality reports, this material is fragmentary and spotty unless it is reported by a special study. Fragmentary as it is this information does show that the industrial worker has a higher mortality rate than the entire group of gainfully employed.

While accidents, occupational diseases and high occupational death rates appear to be impressive, there is no doubt that the least dramatic side is probably by far the most important; namely, the lost time and incapacity due to illness. It is this last condition which is so widespread as to be almost universal, in all localities, at all ages, in all occupations. A vast amount of wasted energy and life, due chiefly to preventable illness, some of which may be contributed by the working environment, presents a problem in need of our serious attention.

Although we have made significant progress in the control of certain of the preventable diseases, as is evidenced by the declining trend of our death rates in the last forty years, it is a fact that this saving of life has taken place chiefly in childhood and in the years of early adult life. No significant increase appeared to occur during this period in the average years of life remaining to persons of middle and advanced age. Death rates from some of the important diseases of adult life have been increasing, a phenomenon understandable in the light of the fact that the principal causes of death operating in the advanced years are primarily chronic. National Health Survey data show that chronic diseases, including permanent impairments, alone account for six to ten days of incapacity (from illness and accidents) by the average person per year and data from the U. S. Public Health Service show that 7.5 days are lost annually by each employed male, and 10.9 days by each employed female.

Other data show that roughly 0.5, 2.5 and 8 days per person per year are lost on occupational diseases, occupational injuries, and accidents and non-occupational disabilities, respectively.

Industrial hygiene is the science of the preservation of the health of workers. It, therefore, involves primarily a program of health conservation, and accident and occupational disease prevention. Such a program of necessity extends beyond the scope of accident and occupational disease prevention. It takes in the broad aspects of the health of the worker in its broadest interpretation and involves problems of industrial environment (dusts, gases, vapors, noise, overcrowding, defective lighting and ventilation, high temperatures and humidity, and general plant sanitation), hours of work, fatigue, communicable diseases in the factory, mental health and personal hygiene. Some of these factors in their broad implications do not limit themselves to the confines of the plant proper but involve home conditions as well. Industrial hygiene is the practice of applying the general program of public health to the industrial worker.

In the United States in 1938 there were 17,000 deaths from accidents, 75,000 permanent disabilities and 1,400,000 temporary disabilities. The Bureau of Labor Statistics reports that \$75,000,000 is paid annually for medical and hospital services and \$240,000,000 for

compensation. Add to this the cost of minor injuries, no injury accidents and the innumerable indirect costs of accidents and the total estimated cost is \$5,000,000,000. Sickness costs in industry have been estimated at another \$5,000,000,000 which makes a grand total of \$10,000,000,000 annually for all types of disability.

It is therefore quite evident that the picture presented with reference to the health status of a large segment of our population has not only important public health implications, but is also of tremendous social and economic significance. It is the desire of the Division of Industrial Hygiene of the State Department of Health to develop a constructive program which can be promoted by nominal investment on the part of industry and government and will pay tangible dividends.

There are two main types of service required in the practice of industrial hygiene for the solution of the problems of health hazards. These are medical and engineering services. The terms are used in a broad sense, and medical service includes the allied professions, nursing and the various medical specialties, pathology, roentgenology, etc. The engineering services would include, in addition to engineering, non-medical personnel engaged in public health work, such as chemists, bacteriologists, biometricians and statisticians. The medical department is to be concerned with the person and his hygiene, while the functions with which the engineer concerns himself deal with the environment of the worker.

It shall be the duty of the medical department to diagnose diseases and primarily to recognize the existence of such diseases as may be due to the factory environment. While basing his conclusions on the findings of the physician, the engineer will be in a position to learn where control measures are to be initiated. To do this the engineer must study local plant conditions which may be detrimental to health and by precise measurements determine the extent of the hazard. Once this has been done he must consider methods for controlling or minimizing the hazardous conditions as well as check the effectiveness of the control measures.

Health hazards may be classified as chemical, biologic and physical.

1. *Chemical Hazards:*

In this classification we have an important

group of poisons, great in variety and number. Dublin and Vane list some 94 groups of industrial poisons associated with about 2,500 occupational exposures.

Chemicals may be further subdivided into:

- a. Solids, (dusts, silica, lead).
- b. Liquids (alkalies, acids, dyes).
- c. Fumes (lead oxides, arsenic oxides, cadmium oxides).
- d. Volatile chemicals: solvents and lacquers, carbon bisulphide, carbon tetrachloride, trichlorethylene and alcohols.
- e. Gas hazards: carbon monoxide, sulphur dioxide, hydrogen sulphide, hydrocyanic gas, ammonia and refrigerating gases, methyl and ethyl chloride.

2. *Biologic Hazards:*

Biologic health hazards include the infections, such as anthrax, tuberculosis, typhoid fever, pneumonia and other respiratory diseases.

3. *Physical Hazards:*

In this classification are the accidents caused by machinery and other environmental conditions, excessive humidity, heat and cold, defective illumination, repeated motion, shock and abnormal atmospheric pressure.

The actual activities of the Division may be divided into five phases:

1. The determination of the problem.
2. Preliminary surveys.
3. Qualitative evaluation of the working environment and the presence or absence of pathologic processes in the worker. If present, a careful evaluation as to whether they are of occupational or non-occupational origin.
4. Control measures. On the completion of the determination of what hazards are present, control measures may be suggested. Likewise, if pathology is present in the individual, treatment may be suggested except in the case of communicable disease in which instance the care and supervision of the patient will come under the jurisdiction of other bureaus of the State Department of Health.
5. Periodic checks on the control measures in the factories and periodic physical examinations of the workers.

The control of industrial health hazards falls into two categories, namely medical and engineering.

MEDICAL CONTROL

Objectives:

1. Basic objectives of an industrial health service are:

a. To ascertain, by examination, the physical and mental fitness of employees for work.

b. To maintain and improve the health and efficiency of those already employed.

c. To educate the worker in accident prevention and personal hygiene.

d. To reduce lost time and absenteeism from illness or injury.

Functions:

Some of the functions of a medical service are:

a. Regular appraisal of plant sanitation.

b. Periodic inspection for occupational disease hazards.

c. Adoption and maintenance of adequate control measures.

d. Provision of first aid and emergency services.

e. Prompt and early treatment for all illnesses resulting from occupational exposure.

f. Reference to the family physician of individuals with conditions needing attention, cooperating with the patient and his physician in every practical way to remedy the condition.

g. Uniform recording of absenteeism due to all types of disability.

h. Impartial health appraisals of all workers.

ENGINEERING CONTROL

In general, the following methods have been found of value in controlling certain health hazards by engineering methods: 1. substitution, 2. isolation, 3. wet methods, 4. local exhaust, ventilation and 5. respiratory protection.

From the foregoing it may be readily seen that the activities as herein set forth outline a rather ambitious program for so small an organization. In closing I should like to set forth the general policy of the Division.

The Division of Industrial Hygiene will function as a neutral fact-finding organization to act as consultants to industry as a whole and to act in the same capacity to all official state agencies. It shall be the duty of the Division to practice industrial hygiene in all its phases and to perform not only the specific duties required in the analysis and control of toxic materials but to practice and

promote public health in all its phases as they pertain to the industrial population of the state.

This may best be performed by the closest cooperation with the already existing agencies: County Health Departments, Department of Labor, Bureau of Industrial Relations, the medical profession, the U. S. Public Health Service, and the other bureaus and divisions of the Alabama State Department of Health.

SPECIAL ARTICLE

FOR THE DEFENSE OF AMERICA

The Nation is in danger and we have neither time nor manpower to spare. All the news which we receive indicates one thing very plainly: the next few months may mark the turning point of the war. It is a time when every plane, every ship, every squad, every dollar can play its part.

Every member of our profession is doing his job. This is the surgeon with the combat troops, the staff member of a base hospital, the medical man assisting a draft board, and the local doctor caring for civilians. But we must do even more than this. We must help provide money—the sinews of war. We, as Americans, are financially responsible for the planes, tanks, ships and guns.

It is possible to secure a part of the necessary money to finance our present effort from banks and lending agencies. But such borrowing expands the credit structure and contributes to inflation. To the largest possible extent, we seek today to pay as we go. This means that each year we shall pay as much as possible of the annual cost of our war effort out of taxes.

During the coming year we shall pay approximately nine billion dollars more in taxes than we have paid this year. The following year's tax program may call for even more. But however staggering may be the idea of such sums, we must remember that it will be far cheaper to win than to lose the war.

Tax revenues and bank credits, however, are not sufficient. To obtain the money to push the war effort to the maximum, the Government asks all Americans to lend dollars to the Government through the Defense Savings Program. This is not a lending program just for today, but for every day until

the last battle in our march to victory is won. Every Defense Bond and Stamp is backed by the full faith and credit of the United States Government. The Bonds and Stamps represent individual reserves, just as good as cash in the bank, which can be drawn upon whenever a financial need arises.

The Treasury Department offers three series of Defense Savings Bonds: Series E, F and G. Series E Bonds, "The People's Bonds," can be bought only by individuals. These are appreciation bonds which, if carried through to the 10-year maturity date, provide an average annual return of 2.9 per cent upon the investment. The smallest E Bond costs \$18.75 and pays \$25 at maturity. Others cost from \$37.50 (\$50 maturity value) to \$750 (\$1000 maturity value). A bond of this series may be registered in the names of one or two persons or in the name of one person with a second listed as beneficiary. All post offices and most banks sell "The People's Bonds."

The F and G Bonds are primarily for associations, corporations, and large individual investors. Series F Bonds, like Series E, are appreciation bonds. They are purchased for 74 per cent of their face value, and at the end of the 12-year maturity period provide a return equivalent to an annual interest rate of 2.53 per cent. The smallest of the F Bonds costs \$18.50 and pays \$25 in 12 years; the largest costs \$7400 and pays \$10,000 at maturity.

The G Bonds, unlike Series E and F Bonds, are sold at par; that is, the cost is the same as the face value. But the G Bonds pay interest semiannually at the rate of 2½ per cent throughout their 12-year maturity period, thus providing a current income for the investor. Series G Bonds are issued in denominations from \$100 to \$10,000. Only the Treasury Department and Federal Reserve Banks issue F and G Bonds, but most banks will handle applications for them.

The minimum cost of E, F and G Bonds are \$18.75, \$18.50 and \$100 respectively. But these are not the smallest amounts that can be invested in Defense Savings. Smaller amounts of money purchase Defense Savings Stamps which range in price from 10 cents to \$5.00. When the equivalent of a minimum price bond has been invested in Defense Stamps, they can be turned in for one of the registered interest-bearing bonds.

America's Program is the People's Program. That there shall be no fiscal barrier to the Nation's all-out fight for victory, we must buy Defense Bonds steadily, systematically from now on until success crowns this mighty effort.

Pitfalls in Proctologic Diagnosis: Altered Stools

—A relaxed sphincter may frequently lead to the erroneous diagnosis of diarrhea because of the interference with fecal retention. A fecal overflow may be misinterpreted by the patient as "diarrhea." An examination by a competent proctologist will, of course, disclose the fact that there is some interference with normal muscle tension. While this may be due to a local injury or lesion involving some of the nerve supply of the sphincter, it may follow trauma of various types. One must not overlook the factor of onanism or unnatural sexual practices, as well as some spinal diseases or those of the central nervous system which may cause sphincteric relaxation and ataxia.

Sometimes, sphincter relaxation is caused by the injudicious use of the bivalve speculum as an examining instrument or the over-distention of the sphincter during a rectal operation, usually under general anesthesia.

Another source of fecal overflow may be post-operative stenosis, the result of incomplete or improper aftercare following rectal surgery. Bands of cicatricial tissue may stenose the canal or bind the sphincter so as to prevent its complete function. As a result of the efforts of the colon to overcome this obstruction, a hypersecretion of mucus will occur and the patient suffers from considerable fecal leakage. As has been mentioned above, the irritative presence of a fecal impaction may also produce symptoms translated erroneously as diarrhea.—*Hirschman, South. M. J., March 1942.*

Eye Injuries—Under mechanical forces, the most frequent injury encountered is foreign bodies. Their location may be under the lids, therefore are quite easily removed by simply everting the lid by grasping the lashes, pulling the lid downward, placing a round probe or applicator over the lid, causing the patient to look down, raising the lid slightly while bearing downward and forward with the instrument. At this time the offending body may be easily brushed away.

Foreign bodies on the cornea may be simple or lead to dangerous complications, and their removal should not be attempted without perfect anesthesia with brilliant illumination and accurate magnification, at times staining with fluorescein solution. For anesthetic purposes, I use a 2 per cent solution of butyn, exclusively. Two drops in the lower cul de sac every minute for three times, will produce perfect anesthesia. Then, with a dull spud or applicator wound with cotton, dipped in sterile boric solution, the foreign body is easily removed.—*Martin, New Orleans M. & S. J., Feb. '42.*

THE JOURNAL

of the

Medical Association of the State of Alabama

Editor-in-Chief

FRED W. WILKERSON.....Montgomery

Associate Editors

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March 1942

THE 1942 ANNUAL SESSION

Indications are that the approaching meeting of the Association will be one of the best in its history, despite the absence in the armed services of the country of a comparatively large number of its members.

As usual, the Jerome Cochran Lecture will be a featured event, this year's speaker to be Dr. Harvey B. Stone of Baltimore, and his subject "Biliary Diseases as Seen by the Surgeon." Other interesting topics will be discussed also, as, for example, "Carcinoma of the Breast" by Dr. Frank E. Adair of New York; and "The Treatment of Compound Fractures" by Dr. Edward Compere of Chicago.

Members of the Association will likewise make many important contributions to the program, both of the general sessions and of the Sections on Medicine, Surgery, Pediatrics, and Eye, Ear, Nose and Throat.

Place of meeting is the Whitley Hotel, Montgomery, and the date April 21-23.

USE OF FEMALE SEX HORMONES

"The practical use of female sex hormones in disorders of women is indeed still limited. Clinical trials are vastly easier than fundamental investigation, but until more basic knowledge is acquired, voluminous contradictory and poorly controlled results will continue to appear and bewilder even those who are supposed to have more than average

familiarity with the field. Many physicians believe that they are behind the times in the matter of hormone treatment and that others can accomplish more with hormones than they can. From my own experience, in practice and laboratory and from a fairly intimate acquaintance with the literature, I can assure them that they are not really behind the times, for just as soon as a treatment is found to be clearly and consistently effective it rapidly comes into universally accepted use. Only estrogen, alone, in the treatment of the menopause has reached that goal."

This is the conclusion reached by Smith¹ in his rather brief but very excellent consideration of this dreaded subject. And such an honest and forthright discussion, coming from the assistant professor of gynecology at Harvard, should do much to cheer and comfort many lesser practitioners who must deal with the disorders of women. Physicians are probably less prone to remove hastily any and all female reproductive organs nowadays than they once were and this is certainly as it should be. But many, perhaps the majority, have certainly gone in far too heavily for treatment with hormones. It is usually very easy to believe the glowing reports that one sees in the journals and it is frequently very difficult not to be led in a certain direction by the suave detail men who crowd our offices and who direct far too much of our therapy. Any honest doctor of many years practice has but to recall the whole horde of glandular products that have been in use at one time or another during the past twenty-five years to realize that most of them have done little or no good. Of course treatment with hormones must continue and further research will doubtless add greatly to their efficacy, but we must face the problem objectively and honestly as Smith has done. We must bear in mind the conclusion of Hoskins² who, in the same symposium, said, "It is emphasized that the normal physiologic mechanisms are in part not yet known and that nature's use of the sex hormones, even as now known, is but poorly imitated by the practical therapist."

1. Smith, George Van S.: The Use of Female Sex Hormones in Disorders of Women, New England J. Med. 225: 719 (Nov. 6) 1941.

2. Hoskins, Roy G.: The Current Status of Female Sex Hormones, New England J. Med. 225: 722 (Nov. 6) 1941.

*Deceased.

PROGRAM OF THE ANNUAL SESSION
MONTGOMERY

APRIL 21-22-23, 1942

THE WHITLEY HOTEL

GENERAL INFORMATION

All general sessions of the Association will be in the Blue and Gray Room of the Whitley Hotel, convention headquarters.
Section meetings will be held at the places indicated in the program.

TIME LIMIT OF PAPERS

The maximum time consumed by essayists must not exceed fifteen minutes. This time limit, however, does not apply to invited guests. It is suggested that the salient features of papers be presented within this time, reserving the complete elaboration for publication in the Journal. Discussions will be limited to 5 minutes for each speaker.
All papers read before the Association must be deposited with the Secretary when read; otherwise, they will not be published.
During the discussion of papers, the speaker will please walk forward to the platform and announce his name and address distinctly.
Papers will be called in the order in which they appear on the program. Should a reader be absent when called, his paper will be passed, and called again when the program is concluded.

HOST TO THE ASSOCIATION

The Montgomery County Medical Society

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Woodfin Cobbs J. F. Dillon III

Entertainment
(General)

H. P. (Blue) Harris, *Chairman*
L. L. Hill, Jr. Claud Johnson
D. S. Hagood

Entertainment
(Doctors' Wives)

Mrs. L. L. Hill, Jr., *Chairman*
Mrs. D. G. Gill Mrs. Robert Parker
Mrs. Douglas Cannon Mrs. John Davis
Mrs. John Dillon Mrs. Wm. Britton

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Acting State Health Officer

B. F. Austin Montgomery

PROGRAM

First Day, Tuesday, April 21

Morning Session

Blue and Gray Room
The Whitley Hotel

1. Call to Order at 10:00 A. M. by the President—
J. M. Mason, Birmingham.
2. Invocation—
3. Addresses of Welcome—
Hon. C. B. Brown, Mayor of Montgomery.
J. L. Branch, President, Montgomery County Medical Society.
4. Presentation of the President—
R. C. Stewart, Senior Vice-President, Sylacauga.
5. Message of the President—
J. M. Mason, Birmingham.
6. Reports of the Vice-Presidents—
(1) R. C. Stewart, Sylacauga.
(2) J. S. Tillman, Clio.
(3) Merle Smith, Parrish.
(4) J. Paul Jones, Camden.
7. Report of the Secretary-Treasurer—
Douglas L. Cannon, Montgomery.

8. Report of the Committee of Publication—
F. W. Wilkerson, Montgomery.
9. Reports of Standing Committees—
 - (1) Public Relations—
John A. Martin, Chairman.
 - (2) Mental Hygiene—
Frank A. Kay, Chairman.
 - (3) Maternal and Infant Welfare—
A. E. Thomas, Chairman.
 - (4) Cancer Control—
J. P. Chapman, Chairman.
 - (5) Prevention of Blindness and Deafness—
B. F. Jackson, Chairman.
 - (6) Postgraduate Study—
Ralph McBurney, Chairman.
 - (7) Accidents and Industrial Hygiene—
Earle Conwell, Chairman.
 - (8) Archives and History—
Toulmin Gaines, Chairman.
 - (9) Physician-Druggist Relationships—
Seale Harris, Sr., Chairman.

Afternoon Session

Tuesday, April 21

2:00 P. M.

SECTION ON MEDICINE

Blue and Gray Room
The Whitley Hotel

C. G. Laslie, Montgomery, *Chairman*
D. J. Long, Montgomery, *Secretary*

1. RALPH McBURNEY,
Tuscaloosa.
Paper: *A Clinical Evaluation of the Erythrocyte Sedimentation Rate—Lantern Slides.*
Discussion: C. K. Weil, Montgomery; G. S. Graham, Birmingham.
2. I. MILTON WISE,
Mobile.
Paper: *The Preparation of Human Plasma—Its Use in the Treatment of Shock.*
3. H. B. BURDESHAW,
Dothan.
Paper: *Blood and Blood Substitutes in the Treatment of Hemorrhage and Shock.*
Discussion of 2 and 3: G. O. Segrest and E. B. Frazer, Mobile; O. N. Edge, Troy.
4. J. O. FINNEY,
Gadsden.
Paper: *Peptic Ulcer—Analysis of 188 Cases With Special Reference to Hemorrhage.*
Discussion: H. M. Simpson, Florence; E. Dice Lineberry, Birmingham.
5. FRANK A. KAY, J. D. SMITH and N. H. REIM,
Tuscaloosa.
Paper: *Electro-Shock Treatment in Psychiatric Disorders.*
Discussion: J. A. Becton, Birmingham.

6. SEALE HARRIS, JR.,
Birmingham.
Paper: *Treatment of Cardiac Neurosis.*
Discussion: G. F. Walsh, Fairfield; H. R. Carter, Jr., Birmingham.

SECTION ON SURGERY

(Including Gynecology and Obstetrics)

Ballroom, Jefferson Davis Hotel

H. S. Bartlett, Montgomery, *Chairman*
Claud Johnson, Montgomery, *Secretary*

1. P. P. SALTER,
Eufaula.
Paper: *Intestinal Obstruction.*
Discussion: George Blue, Montgomery; A. C. Jackson, Jasper.
2. W. N. JONES,
Birmingham.
Paper: *Case Report of Benign Ovarian Tumor, with Bilateral Hydrothorax and Ascites.*
Discussion: E. L. Gibson, Enterprise; K. E. Luckie, Selma.
3. FRENCH H. CRADDOCK, JR.,
Sylacauga.
Paper: *Intravenous Alcohol in Postoperative Analgesia.*
Discussion: Luther Davis, Jr., Tuscaloosa; L. E. Morton, Anniston.
4. LOUISE BRANSCOMB,
Birmingham.
Paper: *Primary Dysmenorrhea.*
5. WYATT C. SIMPSON,
Gadsden.
Paper: *The Surgical Treatment of Dysmenorrhea.*
Discussion of 4 and 5: M. Y. Dabney, Birmingham; J. M. Weldon, Mobile.
6. ERSKINE CHENAULT,
Decatur.
Paper: *Practical Factors in Spinal Anesthesia.*
Discussion: Joe D. Wilson, Birmingham; J. D. Bush, Jr., Tuscaloosa.

Evening Session

Tuesday, April 21

8:00 P. M.

SECTION ON PEDIATRICS

Blue and Gray Room
The Whitley Hotel

W. R. Britton, Montgomery, *Chairman*
J. Sam Smith, Montgomery, *Secretary*

1. FRANK C. WILSON,
Birmingham.
Paper: *Surgical Treatments in Children.*
2. CHARLES B. BRAY, D. D. S.,
Birmingham.
Paper: *Problems of the Teeth and Gums.*

3. ANDREW L. GLAZE,
Birmingham.
Paper: *Treatment of Skin Diseases in Children.*

4. BESSIE MAE BEACH,
Montgomery.
Paper: *Progress in Pediatrics, with Special Consideration of the Newer Sulfonamide Drugs.*

Note: Discussion of the papers will be informal.

SECTION ON EYE, EAR, NOSE AND THROAT

Ballroom, Jefferson Davis Hotel

B. F. Jackson, Montgomery, *Chairman*
Paul S. Mertins, Montgomery, *Secretary*

1. GRADY E. CLAY,
Atlanta.
Paper: *Ophthalmoscopy in Hypertensive Disease.*

2. HERMAN W. FRANK,
Gadsden.
Paper: *Use of Sulfonamides in Acute Otitis Media and Acute Mastoiditis.*

3. RALPH CLEMENTS,
Tuscaloosa.
Paper: *A Newer Treatment for Perennial Hay Fever.*

4. N. E. MILES,
Birmingham.
Paper: *A Previously Undescribed Allergic Keratitis—With Report of Cases.*

Note: Discussion of the papers will be informal. Motion pictures on otolaryngology and ophthalmology will be shown.

Morning Session

Wednesday, April 22

8:30 A. M.

GENERAL

Blue and Gray Room
The Whitley Hotel

1. J. B. McLESTER,
Birmingham.
Paper: *The Treatment of Heart Disease Without Special Technical Equipment.*

2. WALTER F. SCOTT,
Birmingham.
Paper: *Injuries of the Urinary Tract.*

3. EDWARD COMPERE,
Chicago.
Paper: *The Treatment of Compound Fractures.*

4. FRANK E. ADAIR,
New York.
Paper: *Carcinoma of the Breast.*

5. IN MEMORIAM—JAMES NORMENT BAKER
E. V. Caldwell,
Huntsville.

6. THE JEROME COCHRAN LECTURE
Harvey B. Stone,
Baltimore.
Subject: *Biliary Diseases as Seen by the Surgeon.*

7. C. L. RUTHERFORD,
Mobile.
Paper: *Carcinoma of the Uterus.*

Afternoon Session

Wednesday, April 22

2:00 P. M.

GENERAL

Blue and Gray Room
The Whitley Hotel

1. HUGHES KENNEDY, JR.,
Birmingham.
Paper: *The Effects of Obstetric Sedation and Anesthesia on the New Born.*

2. S. L. LEDBETTER, JR.
Birmingham.
Paper: *Wound Healing and Wound Closure.*

3. FRED WILKERSON,
Montgomery.
Paper: *Some Errors in the Treatment of Hypertension.*

4. M. S. DAVIE,
Dothan.
Paper: *Peptic Ulcer.*

5. T. B. HUBBARD,
Montgomery.
Paper: *Safety in Intestinal Surgery.*

6. CLARENCE R. BENNETT,
Eufaula.
Paper: *Heart Disease in Pregnancy.*

7. FRANK W. PICKELL,
Brewton.
Paper: *Fractures of the Upper Humerus—Advances in Treatment.*

Evening Session

Wednesday, April 22

8:00 P. M.

GENERAL

Blue and Gray Room
The Whitley Hotel

1. J. H. DODSON,
Mobile.
Paper: *A Review of Some of the Anatomic Structures Dealt With in Treating Anorectal Diseases.*

2. RALPH BENSON,
Birmingham.
Paper: *Management of the Third Stage of Labor.*

3. PANEL DISCUSSION—POLIOMYELITIS

John W. Simpson, Birmingham, *Chairman*.

- (a) Epidemiology
D. G. Gill, Montgomery.
- (b) Pathology
Alfred E. Casey, New Orleans.
- (c) The Acute Stage
C. A. Grote, Huntsville.
- (d) Muscular Rehabilitation
Earle Conwell, Birmingham.

Last Day, Thursday, April 23

8:30 A. M.

Blue and Gray Room
The Whitley Hotel

Business meeting of the Association sitting as the
Board of Health of the State of Alabama.

- (1) Report of the Board of Censors;
- (2) Revision of the Rolls;
- (3) Election and Installation of Officers.

MEDICAL PREPAREDNESS

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DEN- TISTS AND VETERINARIANS

OFFICE OF DEFENSE HEALTH AND WEL- FARE SERVICES

PAUL V. McNUTT, Director

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John G. Hardenbergh, V. M. D.	
Major Roger G. Prentiss, Jr., M. C., U. S. Army	

Address all communications to

**Procurement and Assignment Service
601 Pennsylvania Ave.
Washington, D. C.**

PREFACE

The Directing Board of the Procurement and Assignment Service, through the Committee on Information, has drawn up the following information regarding the organization and functions of the Procurement and Assignment Service. This pamphlet is designed to answer questions which may arise in the minds of individual physicians, dentists and veterinarians concerning the activities of the Procurement and Assignment Service.

In the appendixes are complete lists of the various cooperating committees and agencies that should be consulted with regard to matters of policy pertaining to their offices.

The corps area officers and the state chairmen in the respective professions will be available for consultation and advice.

For the Directing Board.

S. F. SEELEY, M. D., Major, M. C., U. S. Army,
Executive Officer,
Procurement and Assignment Service.

HISTORY

The Procurement and Assignment Service was authorized by the President on Oct. 30, 1941. The creation of this agency resulted from a recommendation from the Subcommittee on Education to the Health and Medical Committee of the Office of Defense Health and Welfare Services on March 31, 1941. Following a meeting of the Health and Medical Committee on April 28, this recommendation was transmitted to the Committee on Medical Preparedness of the American Medical Association for its consideration. The latter committee presented the recommendation to the House of Delegates of the American Medical Association, which resolved:

That the United States government be urged to plan and arrange immediately for the establishment of a central authority with representatives of the civilian medical profession to be known as the Procurement and Assignment Agency for physicians for the Army, Navy and Public Health Service and for the civilian and industrial needs of the nation.

On Oct. 22, 1941 the Health and Medical Committee named a commission to draft a plan for development of such a service. As a result of the meeting of this commission, it was recommended that an office for procurement and assignment of physicians, dentists and veterinarians should be established, that the office should be a part of the Office of Defense Health and Welfare Services and that the function of the office should be to procure personnel from existing qualified members of the professions concerned. The Procurement and Assignment Services, through the facilities of the Office of Defense Health and Welfare Services, would have available the fiscal budgetary, legal and advisory departments of a well established governmental agency. The concluding paragraphs of its report are as follows:

For this reason a special commission, appointed by the Health and Medical Committee of the Office of Defense Health and Welfare Services has made the following recommendations:

1. That an Office of Procurement and Assignment of physicians, dentists and veterinarians be established.

2. That this office shall function as part of the Office of Defense Health and Welfare Services, which is itself a part of the Office for Emergency Management.

3. The function of this office shall be to procure personnel from existing qualified members of the professions concerned. The office shall receive from various governmental and other agencies requests for medical, dental and veterinary personnel. These requests shall indicate the number of men desired, the time during which they must be secured, the qualifications and limitations placed on such personnel. The office must then by appropriate mechanism arrange to secure lists of professional personnel available to meet these requirements, utilizing such existing rosters, public and private, as it may find acceptable. It shall also be authorized to approach such professional personnel as is considered to be available and to use suitable means to stimulate voluntary enrolment.

4. The Office of Procurement and Assignment shall consist of a board of five members, one of whom shall be chairman. This board shall be chosen from members of the medical, dental or veterinary professions and shall not include any salaried employees of the federal government. This board shall function without salary but shall be entitled to actual and necessary transportation, subsistence and other expenses incidental to the performance of its duties.

5. The board shall appoint an executive secretary who shall serve also as executive officer and who shall be without vote in its deliberations and decisions. He shall serve as a full time employee with salary (to be determined) and with such assistants as the board may determine necessary to carry out its functions.

6. The board shall be authorized to establish such advisory committees and subcommittees as may be necessary. These committees shall represent the various interests concerned, such as medical, dental and veterinary schools, hospitals, Negro physicians and women physicians. Members of such committees shall serve without salary but shall be entitled to actual and necessary transportation, subsistence and other expenses incidental to the performance of their duties.

7. The board shall also be authorized to request various agencies of the government using medical, dental or veterinary personnel to appoint liaison officers and representatives to advise the board in carrying out its functions.

8. In carrying out its functions the board shall cooperate with such agencies as are now established under the Selective Service as well as other federal agencies.

On October 30, 1941 the following letter to the President from the Director of Defense Health and Welfare Services was approved

by the President and constitutes the authority under which the Procurement and Assignment Service operates:

October 30, 1941.

My Dear Mr. President:

The coordination of the various demands made on the medical, dental and veterinary personnel of the nation and the most efficient utilization of this personnel would seem to require the establishment of a special agency capable of recording the qualified personnel available, of assigning or encouraging enlistment of such personnel in the services where most needed and of giving every qualified physician, dentist and veterinarian an opportunity to enroll himself in some service demanded by the national need.

For these reasons I wish to propose that there be established as one of the principal subdivisions of the Office of Defense Health and Welfare Services an office for the procurement and assignment of physicians, dentists and veterinarians. This office would be known as the Procurement and Assignment Agency.

The functions of the agency would be (1) to receive from various governmental and other agencies requests for medical, dental and veterinary personnel, (2) to secure and maintain lists of professional personnel available, showing detailed qualifications of such personnel, and (3) to utilize all suitable means to stimulate voluntary enrolment, having due regard for the over-all public health needs of the nation, including those of governmental agencies and civilian institutions.

The agency would consist of a board of five members, one of whom would serve as chairman. The board would serve without salary but would be entitled to actual and necessary transportation, subsistence and other expenses incidental to the performance of its duties.

A full time executive officer (with salary to be determined) would be appointed, together with such assistants as would be required to carry out the functions of the Agency.

I recommend that the board be composed of Dr. Frank Lahey, chairman, Dr. James Paullin, Dr. Harvey B. Stone, Dr. Harold S. Diehl and Dr. C. Willard Camalier.

This communication is addressed to you in accordance with provisions contained in paragraph 4 of the Executive Order, dated Sept. 3, 1941, "Establishing the Office of Defense Health and Welfare Services in the Executive Office of the President and Defining Its Functions and Duties," to the effect that the President shall approve the establishment of the principal subdivisions of the Office of Defense Health and Welfare Services and the appointment of the heads thereof.

In the event you approve the establishment of the Procurement and Assignment Agency, together with the board membership as recommended, I shall proceed immediately with the creation of the agency and will prepare budget estimates in the amount of approximately \$50,000 for submission to the Budget Bureau to cover the costs of the agency.

In addition I would propose to instruct the Agency to draft legislation which may be neces-

sary to submit to the Congress providing for the involuntary recruitment of medical, dental and veterinary personnel, in the event the exigencies of the national emergency appear to require it.

Sincerely yours,

Approved PAUL V. McNUTT,
FRANKLIN D. ROOSEVELT. Director.

This letter was approved by the President, Oct. 30, 1941, and the Procurement and Assignment Service was organized accordingly.

LOCATION OF OFFICES

Central Office.—The accompanying chart shows the organization of the Procurement and Assignment Service. The executive officer is Sam F. Seeley, M. D., M. C., U. S. Army. The central office is located at 601 Pennsylvania Avenue N. W., Washington, D. C. To facilitate correspondence, all communications should be addressed to the central office.

Consultant Office.—A consultant office has been established in the headquarters of the American Medical Association, 535 North Dearborn Street, Chicago, under the supervision of Dr. R. G. Leland, where special information regarding physicians is maintained. Similar information regarding dentists is available at the headquarters of the American Dental Association, 212 East Superior Street, Chicago, and regarding veterinarians at the headquarters of the American Veterinary Medical Association, 600 South Michigan Avenue, Chicago. These facts include those supplied directly to the organizations concerned, the classifications developed by the special committees of the Division of Medical Sciences of the National Research Council and confidential information supplied by other agencies.

Corps Area Committees.—In each of the nine Army corps areas, a committee has been established. Each corps area committee includes a chairman, two physicians chosen from the general medical profession, a dentist chosen from the general dental profession, a representative of medical education, a representative of dental education, a representative chosen from the veterinary profession and a representative of the hospitals. These committees are advisory to the Procurement and Assignment Service in reference to questions relating to personnel and are part of the field organization of the Office of Defense Health and Welfare Services. The chairman of each of these committees

acts in a liaison capacity to the corps area surgeons, and representatives of the Office of Civilian Defense, the Selective Service System in the corresponding corps areas. Liaison between the Procurement and Assignment Service and the Bureau of Medicine and Surgery, Navy Department, is maintained directly through the Executive Officer and a representative of the Bureau.

The following is a list of the nine corps area chairmen and the states in each corps area:

First Corps Area.—Chairman, Dr. W. G. Phippen, 31 Chestnut Street, Salem, Mass. States comprising corps area: Connecticut, Maine, New Hampshire, Rhode Island, Massachusetts, Vermont.

Second Corps Area.—Chairman, Dr. A. W. Booth, 222 West Church Street, Elmira, N. Y. States comprising corps area: Delaware, New Jersey, New York.

Third Corps Area.—Chairman, Dr. A. M. Shipley, University Hospital, Baltimore. States comprising corps area: Maryland, Pennsylvania, Virginia, District of Columbia.

Fourth Corps Area.—Chairman, Dr. Edgar Greene, 478 Peachtree Street N. E., Atlanta, Ga. States comprising corps area: Alabama, Florida, Georgia, Louisiana, Mississippi, Tennessee, South Carolina, North Carolina.

Fifth Corps Area.—Chairman, Dr. E. L. Henderson, 606 S. 4th Street, Louisville, Ky. States comprising corps area: Indiana, Kentucky, Ohio, West Virginia.

Sixth Corps Area.—Chairman, Dr. Charles Phifer, 30 North Michigan Avenue, Chicago. States comprising corps area: Illinois, Wisconsin, Michigan.

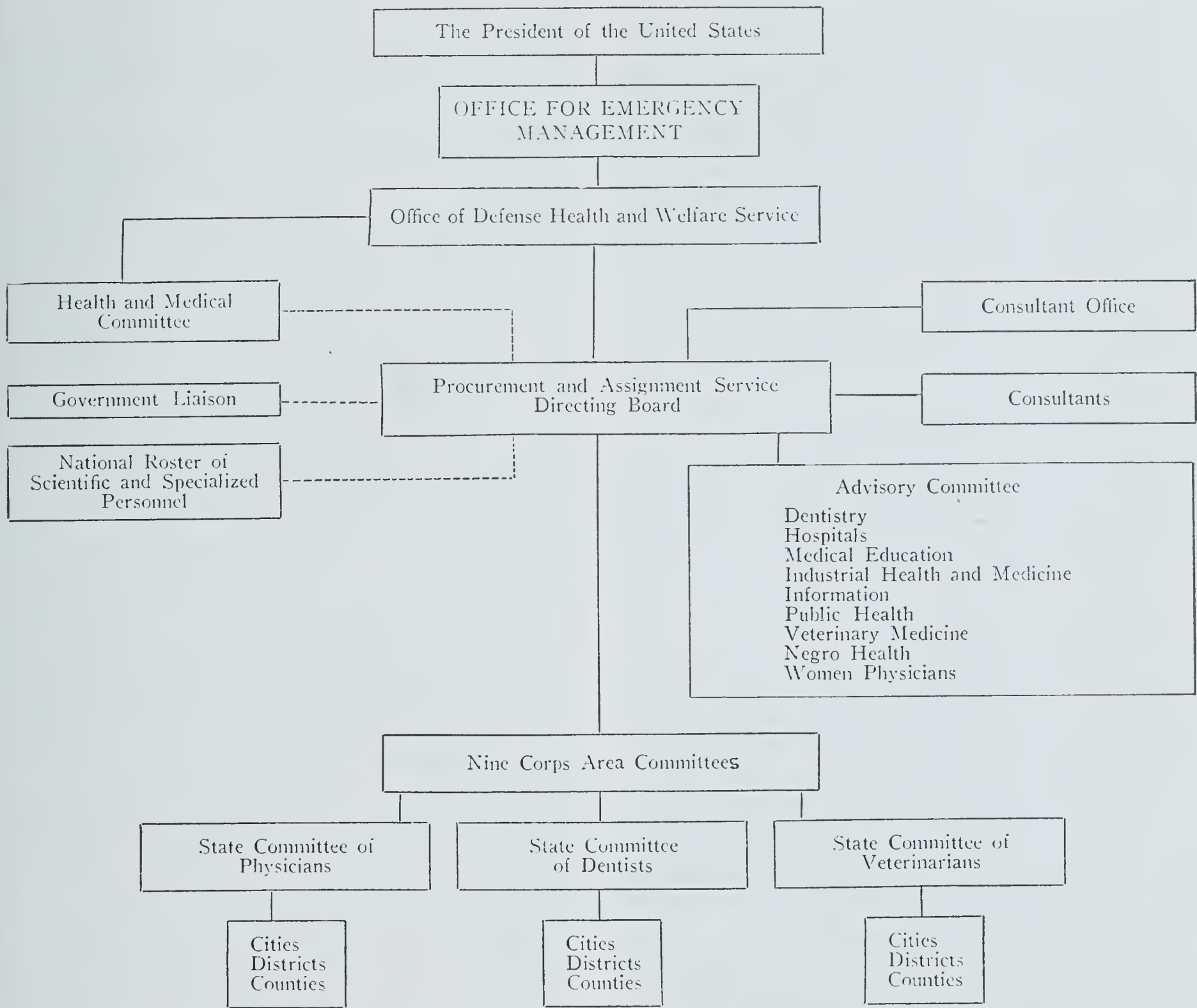
Seventh Corps Area.—Chairman, Dr. Roy W. Fouts, 107 S. 17th Street, Omaha. States comprising corps area: Arkansas, Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota, North Dakota, Wyoming.

Eighth Corps Area.—Chairman Dr. Sam E. Thompson, Kerrville, Texas. States comprising corps area: Arizona, New Mexico, Oklahoma, Texas, Colorado.

Ninth Corps Area.—Chairman, Dr. Charles A. Dukes, 426 17th Street, Oakland, Calif. States comprising corps area: California, Idaho, Montana, Nevada, Oregon, Utah, Washington.

State Chairmen and State Committees.—The state chairmen and the state committees are advisory to the corps area committees and to the central office. To the state committees and also to the county, district and local committees will be referred especially questions concerning the essential character of such services as a physician, dentist or veterinarian may be rendering, thus determining his availability. They will also familiarize themselves with the functions of the

ORGANIZATION OF THE PROCUREMENT AND ASSIGNMENT SERVICE



Procurement and Assignment Service and thus be able to advise those in their community concerning its work.

THE NATIONAL ROSTER

The National Roster of Scientific and Specialized Personnel was created by Executive action in July of 1940 as an office within the Executive Office of the President to be jointly supervised by the National Resources Planning Board and the United States Civil Service Commission. Two primary functions were assigned to the Roster: first, the formulation of as complete a list as possible of all of the United States scientifically and professionally trained citizens; and, second, the development of proper procedures for the most effective utilization of the skills of these citizens in connection with defense and other governmental and national needs. In pursuance of this directive, the Roster has established a completely analytical punch-

card list of the names, locations, and qualifications of the country's specially trained individuals in more than fifty strategic scientific and professional fields. Because of the fact that the American Medical Association was engaged in developing its own roster, the National Roster did not undertake to include any but a small specialized group of the general medical profession. It became necessary therefore to work out an agreement of cooperation between the National Roster and the Procurement and Assignment Service so that the latter could have the benefit of the Roster's experience and facilities in maintaining up to date lists of physicians, dentists and veterinarians. By special action of the boards of trustees of the American Medical Association, the American Dental Association and the American Veterinary Medical Association, all punch card files in the possession of these associa-

tions were made available to the National Roster.

By these joint efforts, the Procurement and Assignment Service will have available in the National Roster at Washington complete records of all material submitted by the professions. The professions in turn will have the benefit of material collected through the roster for their own punch card files at their national headquarters.

A consultant committee to the National Roster for medicine includes Drs. Morris Fishbein, R. G. Leland, and Olin West.

INFORMATION UTILIZED IN THE PROCUREMENT AND ASSIGNMENT SERVICE

Questionnaire.—*American Medical Association:* Beginning in June 1940, the American Medical Association circulated a questionnaire to the physicians of the country. The information from this questionnaire was tabulated in a punch card system which has been made available to the National Roster. Additional information concerning physicians was developed by the Division of Medical Sciences of the National Research Council and other cooperating agencies.

American Dental Association: The American Dental Association has circulated a questionnaire to all dentists. The information thus secured has been placed in a punch card system in the headquarters of the American Dental Association and also made available to the National Roster. The information in the headquarters of the American Dental Association is supplemented by information secured from cooperating agencies.

American Veterinary Medical Association: Through cooperation between the American Veterinary Medical Association and the National Roster, a punch card system covering the veterinary medical profession will be available in the National Roster and in the Headquarters of the American Veterinary Medical Association.

Following the declaration of war, Dec. 8, 1941, other questionnaires were immediately circulated with a view to securing lists of names of physicians who would offer their services for immediate utilization in the emergency. Since the supply of dentists and veterinarians was at this time adequate to meet the needs of the armed forces, additional enrolment forms were circulated only to physicians. As a result of this procedure

the immediate needs of the armed forces were satisfied.

SPECIAL ENROLMENT FORM AND QUESTIONNAIRE FOR PROCUREMENT AND ASSIGNMENT SERVICE

The Procurement and Assignment Service, cooperating with the National Roster of Scientific and Specialized Personnel, has prepared special questionnaires for circulation to every physician, dentist and veterinarian in the United States. This questionnaire will come directly to all physicians, dentists and veterinarians as soon as possible after the National Registration on Feb. 16, 1942. *Every physician, dentist and veterinarian, regardless of age, sex, physical condition, citizenship or employment, should fill out and return the enrolment form and the questionnaire.* Those physicians, dentists and veterinarians who have been commissioned in any United States service previous to the receipt of the enrolment form and questionnaire should so indicate under the heading "remarks" on the enrolment form.

The original questionnaire and enrolment forms previously circulated by the American Medical Association, the American Dental Association and the American Veterinary Medical Association are being utilized to meet requisitions from the armed services and other agencies, until the National Roster is complete and the Procurement and Assignment Service is working routinely. The additional information secured by the special questionnaire now to be described will bring up to date the facts necessary to place each physician, dentist and veterinarian in the work for which he is best qualified.

Roster Questionnaire.—The questionnaire, as developed, includes space on which the physician, dentist or veterinarian will supply the usual data regarding name, address, date and place of birth, citizenship, marital status, race and sex, school of graduation, previous military service in the United States or in the armed forces of other countries, membership in the reserve corps or commissions in any branch of government service. Any additional information regarding special aptitudes, such as knowledge of aviation, radio or cryptanalysis, which might be of value, knowledge of foreign languages and foreign travel will also be included. Again, it should be emphasized, this information is sought to supplement information previously supplied on questionnaires. It is

recognized that the status of any physician, dentist or veterinarian may have changed materially since the time when previous questionnaires were submitted. The new questionnaire will also be tabulated in a special punch card system which will be coordinated with the punch card systems previously mentioned.

In the new questionnaire, opportunity is also given to state in detail appointments held in various local, industrial, state or governmental agencies, in civil practice, and in education and research. Specialization is recognized by appropriate designations which coordinate with certification of specialists by the certifying boards and also with appointments on the staffs of hospitals and other indications of special practice.

The method of practice, whether individual, in partnership or in groups is indicated. Finally an opportunity is given to every physician, dentist and veterinarian to indicate his preference as to the type of service which he will be capable of rendering to the United States during the war.

The Enrolment Form.—On the enrolment form which comes with the questionnaire the physician, dentist or veterinarian voluntarily enrolls himself with the Procurement and Assignment Service. He indicates his first, second, third and fourth preferences of the military, governmental, industrial or civil categories that may require his assistance.

Announcement will be made repeatedly in medical, dental and veterinary medical publications of the time when the circulation of the enrolment form and the questionnaire begins. When you receive your enrolment form and questionnaire, PLEASE ACT PROMPTLY. Those who fail to receive an enrolment form and questionnaire are requested to write to the National Roster of Scientific and Specialized Personnel, 916 G Street N. W., Washington, D. C., within six weeks after announcement has been made that the circulation has begun.

CERTIFICATE AND INSIGNIA

Physicians, dentists and veterinarians who enroll with the Procurement and Assignment Service will receive a numbered certificate indicating that they have made themselves available and will be privileged to wear insignia indicating that such enrolment has been made.

PROCEDURE TO MEET PRESENT NEEDS

The present Army and Navy needs are for physicians under 36 years of age. Those under 36 desiring immediate commission may write now to the Procurement and Assignment Service, 601 Pennsylvania Avenue N. W., Washington, D. C. Their letters will be treated as applications and those who are qualified will receive proper application forms with view of commission in the Army or the Navy. All physicians over 36 and all dentists and veterinarians should await the receipt of the enrolment forms.

METHODS OF ACTION OF THE PROCUREMENT AND ASSIGNMENT SERVICE

By authority of the President, the Procurement and Assignment Service receives requests for personnel from the following governmental agencies:

MEDICAL

United States Army Medical Corps.
United States Navy Medical Corps.
United States Public Health Service.
United States Veterans Administration.
United States Civil Service Agencies.
St. Elizabeth's Hospital (Washington, D. C.),
Resident Staff and Internes only.
United States Indian Service.
Panama Canal Service.
Office of Civilian Defense (full time).

DENTAL

United States Army Dental Corps.
United States Navy Dental Corps.
United States Public Health Service.
United States Veterans Administration.
United States Indian Service.
Panama Canal Service.
Office of Civilian Defense.

VETERINARY

United States Army Veterinary Corps.
United States Navy Hospital Corps Specialists.
United States Public Health Service.
United States Bureau of Animal Industry.
Federal Extension Service.
State Extension Service.
United States Department of Agriculture Marketing Service.
War Department (Federal Civil Service Status —not Army).
Federal Agricultural Experiment Stations.

The Procurement and Assignment Service is also charged with the stimulation of voluntary enrolment, having due regard for the overall health needs of the nation, including the personnel of civilian institutions.

When a request is received from a federal agency for medical, dental or veterinary personnel, the names of those who are qualified to meet the specifications established by the requisitioning agency, who are available and who have indicated, by enrolling with the Procurement and Assignment Service, their willingness to apply for a commission or employment are supplied by the National Roster, utilizing the punch card system previously described. These names are arranged in lists by states. A copy of each list is forwarded to the Consultant Office of physicians, dentists or veterinarians respectively, where each is made more accurate by the elimination of the names of those who do not qualify in view of the special information held in the Consultant Office. These lists are then referred to the state chairmen, who make a decision as to the immediate availability of the physicians, dentists or veterinarians concerned. Such a step is necessary because the availability of the individual may have changed in the period between the return of the official questionnaire in March 1942 and the time when the physician, dentist or veterinarian is notified of the need for his services. The lists are then forwarded by the state chairmen to the Procurement and Assignment Service in Washington.

From these lists the central office obtains the names of those individuals who have thus been found qualified and available.

PHYSICIANS, DENTISTS OR VETERINARIANS FOR
THE UNITED STATES ARMY MEDICAL
DEPARTMENT

The procedure with reference to supplying personnel to the United States Army Medical Department is governed by the following letter of instruction sent out by the Adjutant General's Office to all corps area and department commanders on Jan. 21, 1942.

WAR DEPARTMENT

The Adjutant General's Office
Washington

January 21, 1942

Subject. Procurement of Officers for Medical Department, Army of the United States.
To: All Corps Area and Department Commanders.

1. Letter from this office dated Feb. 3, 1941, file AG 381 (8-13-40) R-A, Subject: "Assistance of the American Medical Association in the classi-

fication and procurement of physicians for military service," is rescinded.

2. There has been established under the Office for Emergency Management, Office of Defense Health and Welfare Services, a Procurement and Assignment Service to coordinate the procurement of physicians, dentists and veterinarians for all governmental, industrial and civilian requirements.

3. In order to expedite appointments in the Medical Corps, Dental Corps and Veterinary Corps, Army of the United States, the following procedure will govern the processing of all applications:

(a) All individual inquiries for information concerning a commission or offers to serve as a medical, dental or veterinary officer should be acknowledged by the headquarters receiving the communication and the communication itself forwarded by indorsement to the Executive Officer, Procurement and Assignment Service, Office of Defense Health and Welfare Services, Social Security Building, Washington, D. C.

(b) The Procurement and Assignment Service will supply to individual applicants who are eligible and qualified for appointment the required forms (WD AGO Form No. 170, "Application for Appointment and Statement of Preferences for Reserve Officers," in duplicate, and WD AGO Form No. 178 and 178-2, both in duplicate) together with a request on the surgeon of the nearest Army post for a final type physical examination. Each request for final type physical examination authorized by the Procurement and Assignment Service will be honored by surgeons of Army posts. Application forms and supporting papers, except the report of physical examination, will be returned by the applicant to the Procurement and Assignment Service; the report of physical examination (WD AGO No. 63) will be forwarded by the surgeon of the station at which the examination was conducted, direct to the Surgeon General.

(c) The completed applications and supporting papers, except report of physical examination, will be transmitted by the Procurement and Assignment Service to the Surgeon General together with a statement by that service derived from its files and regarding eligibility of the applicant for appointment in the Medical, Dental and Veterinary Corps, Army of the United States, as prescribed by current Army regulations. The Procurement and Assignment Service will also furnish the Surgeon General with the professional classification and evaluation of the applicant as determined from the recent nationwide survey made by the Committee on Medical Preparedness of the American Medical Association.

(d) The Surgeon General will forward such completed applications to the Adjutant General as prescribed in paragraph 10 (4), Army Regulations No. 605-10, and inform the Procurement and Assignment Service of action recommended.

4. No change in the present procedure for the appointment of graduates of medical units of the Reserve Officers' Training Corps in the Medical Corps Reserve or for appointment in the Army of

the United States of physicians and dentists for affiliated units, of junior and senior students in medical schools in the Medical Administrative Corps, Army of the United States, or of graduates of such schools who are to be appointed in the Medical Corps, Army of the United States, on graduation.

5. When the applications for appointment have been approved the Adjutant General will notify the applicant direct of his appointment with instructions as to proper completion of oath of office and finger print card and the return of such forms direct to the Adjutant General. When the oath of office has been received by the Adjutant General, the Surgeon General and the Executive Officer, Procurement and Assignment Service of the Office of Defense Health and Welfare Services, Office for Emergency Management, Washington, D. C., will be notified.

By order of the Secretary of War.

(Note: Address now 601 Pennsylvania Avenue N. W., Washington, D. C.)

In summary, the procedure is as follows:

1. The Surgeon General requisitions needed personnel from the Central Office of the Procurement and Assignment Service.

2. The National Roster prepares an appropriate list of names from the National Roster of Scientific and Specialized Personnel.

3. The National Roster sets aside the cards from the file of those available.

4. This list is forwarded to the Consultant Office, Procurement and Assignment Service.

5. The Consultant Office forwards the names to the chairmen of relevant state committees of the Procurement and Assignment Service.

6. These chairmen forward to the central office the lists they received, with names of unavailable (essential) persons indicated.

7. The Central Office mails application forms and authority for physical examination to the qualified and available proposed applicants.

8. Each applicant applies for "final type" physical examination at the nearest Army post.

9. The examiner sends the report to the Surgeon General's Office.

10. The applicant returns his completed application blank and supporting papers direct to the Central Office of the Procurement and Assignment Service.

11. The central office forwards the application form and the supporting papers direct to the Surgeon General.

12. The Surgeon General's Office joins the completed application blank, supporting pa-

pers and the corresponding report of physical examination.

13. The Surgeon General's Office determines whether or not to recommend the applicant to the Adjutant General on the basis of physical and professional qualifications.

14. The Adjutant General notifies the applicant that he has or has not been appointed.

15. The Central Office of the Procurement and Assignment Service is notified whether the applicant has been, or has not been, appointed.

16. The names of those not commissioned are again placed in the file of the National Roster so that the persons affected may be available for other service.

NOTE.—After the applicant has sent his application form and supporting papers to the Central Office of the Procurement and Assignment Service, he may expect his further correspondence to be carried on with the Surgeon General's Office or the Adjutant General's Office.

PROVISION OF PHYSICIANS AND DENTISTS FOR
THE UNITED STATES NAVY MEDICAL
AND DENTAL CORPS

When a request is received from the United States Navy Medical or Dental Corps for personnel, the same procedure will be followed in securing lists of names as has already been described in the previous section regarding the provision of personnel for the Army. The lists of names received from the state chairman will then be forwarded by the Procurement and Assignment Service to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. The Bureau of Medicine and Surgery will then conduct negotiations with the physicians and dentists concerned through the commandants of their respective naval districts. Should a physician or dentist apply directly to a naval commandant for commission in the United States Naval Medical or Dental Corps, the procedure outlined in the following letter from the Bureau of Medicine and Surgery to the commandants of all naval districts, dated Feb. 3, 1942, prevails:

February 3, 1942.

From: The Chief of the Bureau of Medicine and Surgery.

To: The Commandant, All Naval Districts.

Subject: Status of Procurement and Assignment Service for Physicians, Dentists and Veterinarians in connection with recruitment of medical and dental officers for the U. S. Naval Reserve.

1. The Secretary of the Navy has approved the recommendations of the Chief of the Bureau of Medicine and Surgery whereby the services of the "Procurement and Assignment Service, of the Defense Health and Welfare Services," an organization recently created by the President, may be utilized by the Navy in facilitating the recruitment of medical and dental officers for the U. S. Naval Reserve.

2. The primary function of the above mentioned service as pertains to the Navy is to furnish information which indicates certain applicants for appointment in the Medical and Dental Corps of the Navy Reserve either do or do not occupy positions in civil life which are considered essential to the national defense, to the proper functioning of medical and dental schools or whose acceptance of appointments in the Naval Reserve would jeopardize the health and welfare of a local community, such as removing the only qualified orthopedic surgeon from a community composed practically entirely of miners or workers in a factory producing materials essential to the government.

The furnishing of such information to the commandants, before investigation of an applicant, would be of distinct advantage in that the number of investigations would be materially reduced and, in the case of applicants considered essential or holding civilian appointments connected with national defense, need not be accomplished.

3. In this connection, the following procedure is suggested with the request that it be executed by the District Medical Officer on all applications received after Feb. 16, 1942:

(a) Whenever a physician or dentist makes application for appointment, four copies of the enclosed form are to be immediately filled out and the original and two copies forwarded to the Bureau of Medicine and Surgery. It is desired these forms be forwarded when the first contact is made in any given case, without waiting for the applicant to return his completed application.

(b) The Bureau of Medicine and Surgery will retain one copy and send the original and one copy to the Executive Secretary of the Procurement and Assignment Service.

(c) When the Executive Secretary of the Procurement and Assignment Service has placed his endorsement thereon, he will return both copies to the commandant concerned.

(d) If the candidate is not cleared, both copies should be forwarded by the commandant to the Bureau of Medicine and Surgery and the candidate informed by the commandant his application cannot be accepted in view of the action of the Procurement and Assignment Service. The Bureau of Medicine and Surgery will make the second endorsement, retain the original and forward the copy to the Executive Officer of the Procurement and Assignment Service.

(e) If the candidate is cleared, both the original and the copy of the form should be forwarded to the Bureau of Navigation with the application. After final action is taken the Bureau of Medicine and Surgery will make the second endorsement, retain the original and forward the copy to the

Executive Officer of the Procurement and Assignment Service.

(f) About fifty copies of the form adaptable for this purpose are enclosed to serve as a sample of others to be mimeographed or printed locally.

ROSS T. McINTIRE.

In summary, the procedures for Navy procurement are as follows:

1. The Bureau of Medicine and Surgery requisitions personnel from the central office of the Procurement and Assignment Service.

2. An appropriate list of names is prepared from the National Roster of Scientific and Specialized Personnel.

3. The National Roster sets aside the cards bearing these names from the file of those available.

4. The list is forwarded to the Consultant Office, Procurement and Assignment Service.

5. The Consultant Office forwards the names to the chairmen of relevant state committees of the Procurement and Assignment Service.

6. These chairmen forward to the central office the lists they received, with names of unavailable (essential) persons indicated.

7. The central office forwards the names of qualified and available persons to the Bureau of Medicine and Surgery.

8. The Bureau of Medicine and Surgery conducts the subsequent negotiations with the proposed applicants.

9. The Bureau of Medicine and Surgery notifies the central office of the Procurement and Assignment Service which applicants have been and which have not been appointed.

10. The names of those not commissioned are again placed in the file of the National Roster, so that the persons affected may be available for other services.

When an applicant applies directly to any Army installation for commission in the Army Medical or Dental or Veterinary Corps, he is referred to the Procurement and Assignment Service. When an applicant applies to any Naval Commandant for commission in the U. S. Medical or Dental Corps, his application is sent to the Bureau of Medicine and Surgery and such names are cleared through the Procurement and Assignment Service before the commissions are granted.

UNITED STATES PUBLIC HEALTH SERVICE

The Surgeon General of the United States Public Health Service has issued the following circular to all District Directors and Medical Officers in Charge concerning new appointment procedure for physicians and dentists:

February 14, 1942.

1. The Procurement and Assignment Service within the Office of Defense Health and Welfare Services has the responsibility for assisting in the procurement and assignment of physicians and dentists in such manner as to best serve the overall health and medical needs of the country. It is essential that the personnel policy of the Public Health Service be consistent with the major purposes of the Procurement and Assignment Service.

2. It is desired that applications be solicited from qualified physicians and dentists for commission in the reserve corps of the U. S. Public Health Service. The expansion of the reserve corps of the Public Health Service is necessary to serve two major purposes:

(a) The creation of a pool of qualified public health personnel to safeguard essential civilian health services and at the same time to be available for immediate, though temporary, active duty in the event of some major public health emergency.

(b) The procurement of sufficient numbers of qualified physicians and dentists to enable the Public Health Service to carry on its normal and war-time activities.

3. In order to serve these two major purposes, it will be necessary to recruit into the reserve of the Public Health Service physicians and dentists who come within the two following categories:

(a) Those who are now engaged in public health work and who by reason of special training and experience occupy strategic positions in their present civilian capacities. Such personnel would be expected to remain on inactive status with the Public Health Service, except in the event of a major disaster, in which case they would be subject to immediate, though temporary, active duty.

(b) Those who are professionally qualified and also available for immediate active duty in the Public Health Service for such periods of time as the exigencies of the service may determine.

4. Applications from physicians and dentists relating to commissions in the reserve of the Public Health Service will be processed in the following manner: On receipt of an application by the office of the Surgeon General, the application forms and all supporting papers, including the report of physical examination, will be transmitted with a definite recommendation of the Surgeon General to the Procurement and Assignment Service. The Procurement and Assignment Service will in turn certify to the Surgeon General as to the availability of the individual for appointment. In the case of public health personnel occupying

strategic positions in civilian posts, the criterion of availability for commission would rest largely upon the fact that the individual occupies a strategic position, and therefore should remain as long as practicable on an inactive status. In the case of personnel to be called to immediate active duty, the criterion of availability would be based upon the ability of the community to spare the services of the individual. Upon receipt from the Procurement and Assignment Service of notice of clearance, indicating that the applicant is available for a commission in the reserve of the Public Health Service, the appointment will be completed in the usual manner.

5. The above procedure does not apply to the recruiting of individuals for the regular corps of the Public Health Service, or to the appointment of internes or doctors certified by the Civil Service Commission, or to the appointment of sanitary engineer officers in the reserve.

6. When the Public Health Service is without acceptable applications from physicians and dentists for filling vacancies, the Surgeon General will request the Procurement and Assignment Service for the names and qualifications of persons available to fill such vacancies. When decision has been reached as to the selection or non-selection of such persons, the Surgeon General will advise the Procurement and Assignment Service.

7. The Procurement and Assignment Service has given its endorsement to the procedure outlined above.

THOMAS PARRAN,
Surgeon General.

Approved:
PAUL V. McNUTT,
Administrator.

UNITED STATES CIVIL SERVICE COMMISSION

In accordance with the recommendation of the Medical Director, the United States Civil Service Commission has approved a procedure in connection with the recruitment of qualified persons whereby the Commission will cooperate with the Procurement and Assignment Service and deal directly with this service in its recruitment program.

1. The necessary application forms, all properly executed, are to be filed by the applicant with the United States Civil Service Commission at Washington, D. C. Information concerning necessary qualifications is to be obtained from the announcement of the examination. Application forms and announcements may be obtained from the United States Civil Service Commission, Washington, D. C.

2. Applications received under announcements of examinations for physicians, dentists and veterinarians will be rated by the United States Civil Service Commission.

3. The names of those applicants who have received an eligible rating will be submitted to the Procurement and Assignment Service, with the

view of determining whether or not such applicants are essential in their present positions and localities.

4. The names of those persons who have been designated by the Procurement and Assignment Service as being essential in their present positions and localities will not be certified and such persons will be notified by the United States Civil Service Commission that they cannot be certified in view of the action taken by the Procurement and Assignment Service.

5. The names of those persons who have been designated as nonessential will be certified in routine manner to fill the personnel needs of the various government agencies under civil service rules and regulations.

MEDICAL, DENTAL AND VETERINARY EDUCATION

To meet the needs of the nation for a continuing supply of trained medical, dental and veterinary personnel for the armed forces and for civilian needs, and to maintain the standards of education which have prevailed in these fields, the medical, dental and veterinary professions initiated an effort as far back as 1940 to provide for deferment of students in qualified medical, dental and veterinary schools from induction under the provisions of the Selective Service acts. Through the cooperation of the Director of Selective Service, the following memorandums now prevail:

Deferments of Professional Students and Instructors.—The Selective Service System, Washington, D. C., on January 12, 1942, issued the following supplement to Memoranda (I-62), (I-91), (I-99) and I-150) Occupational Deferment of Engineering, Chemical, Physics, Medical, Dental Students and Instructors (III):

The attention of local boards is again invited to the necessity of seriously considering for deferment students in certain specialized professional fields in which dangerously low levels of manpower are found to exist. This memorandum is in addition to and does not rescind those previously issued which apply to students in other critical fields.

Subsequent to the declaration of war, local Selective Service agencies have in many instances proceeded to classify registrants without regard to the fact that they are in training or preparation for activities the maintenance of which is essential to the national health, safety or interest and war production. This is particularly true in cases of engineering, chemical, physics, medical and dental students.

Admittedly there is an overlapping of the military and civilian requirements of a nation at war; however, it must be borne in mind that the one is dependent on the other. It is estimated that the expanding army will eventually require doc-

tors and dentists in numbers heretofore unknown. They will not be available if those students who show reasonable promise of becoming doctors and dentists are inducted prior to becoming eligible for commissions.

War industries are undergoing a hitherto unknown expansion. Aeronautical, civil, electrical, chemical, mining, metallurgical, mechanical and radio engineers together with physicists and chemists are essential to insure a sufficient flow of material for the armed forces, and industry must look to the engineering, chemical and physics students now in training to meet their present and future requirements.

It is equally important that instructors in these fields be seriously considered for occupational deferment. Shortages of qualified instructors are known to exist. The educational institution employing the instructor should be requested to file DSS Form 42A in all cases in which deferment is sought.

In considering student deferment cases, certain local boards are requiring the execution of DSS Form 42A in addition to the affidavit of the college or university contained in Bulletin No. 10 issued by the American Council on Education. DSS Form 42A should not be required when the American Council on Education affidavit has been submitted.

Local boards will be informed when the manpower requirements necessary to the national health, safety or interest and war production become static. Until such time, the policy set forth in the Memoranda to All State Directors I-62, I-91, I-99 and I-150 remains in force.

LEWIS B. HERSHEY, Director.

All students holding letters of acceptance from deans for admission to dental and veterinary colleges and all students of good academic standing in these colleges should present letters or have letters presented for them by their deans to their local boards of the Selective Service System. All premedical students who have letters of acceptance from deans for admission to medical colleges but who have not actually matriculated should present these letters. This step is necessary in order to be considered for deferment in class II-A as a medical, dental or veterinary student. If local boards classify such students in class I-A, they should immediately notify their deans and, if necessary, exercise rights of appeal to their local boards of appeals. If, after exhausting such rights of appeal, further consideration is necessary, request for further appeal may be made to the state directors and if necessary to the national director of the Selective Service System. These officers have the power to take appeals to the President.

On January 28, 1942, the following memorandum (I-363) was released by the Director of Selective Service to all state directors of the Selective Service System.

OCCUPATIONAL DEFERMENTS OF MEDICAL DOCTORS, DENTISTS AND DOCTORS OF VETERINARY MEDICINE

Information previously distributed by this headquarters clearly indicates an overall shortage of medical doctors, dentists and doctors of veterinary medicine in the nation. Since war was declared, the shortage of these professional men has become acute. It is now manifest that every qualified doctor, dentist and veterinarian must serve where he can render the greatest professional service to the nation.

In order to accomplish this purpose, the President, by Executive Order, has formed the Procurement and Assignment Service, under the Office of Defense Health and Welfare Services. This Service was formed primarily for the purpose of gathering and making available information with respect to the supply of qualified practitioners in the fields of medicine, dentistry and veterinary medicine, with a view of securing the most effective allocation of medical manpower as indicated by the requirements of the armed forces, civilian needs and industrial medicine.

To work with the headquarters of this Service in Washington, there is being organized a committee for each Corps Area in the Continental United States. Each committee will consist of five doctors, two dentists and one veterinarian. The committees have been accepted as advisers to the nine Corps Area Surgeons, to the Naval District Surgeons and to the Regional Medical Officers of the Office of Civilian Defense and will operate not only through the subdivisions of the medical, dental and veterinary association but also with the profession at large in securing information and giving advice.

When considering the classification of any registrant who is a qualified medical doctor, dentist, or doctor of veterinary medicine, the Director of Selective Service desires that local boards, through the State Director, shall consult the Procurement and Assignment Committee of the Corps Area for information as to the availability of qualified medical doctors, dentists and doctors of veterinary medicine in the community. This information shall be considered by the local board in determining the registrant's classification. The Executive Order referred to in no way affects the authority of the Selective Service System to classify registrants. The procedure has been established for the purpose of making such information available to local boards.

For the convenience of the State Director and the local boards, the names and addresses of the Chairmen of the Nine Corps area committees of the Procurement and Assignment Service are listed:

First Corps Area: Dr. W. G. Phippen, Salem, Mass.

Second Corps Area: Dr. A. W. Booth, Elmira, N. Y.

Third Corps Area: Dr. A. M. Shipley, Baltimore, Md.

Fourth Corps Area: Dr. Edgar Greene, Atlanta, Ga.

Fifth Corps Area: Dr. E. L. Henderson, Louisville, Ky.

Sixth Corps Area: Dr. Charles H. Phifer, Chicago, Ill.

Seventh Corps Area: Dr. Roy W. Fouts, Omaha, Neb.

Eighth Corps Area: Dr. Sam E. Thompson, Kerrville, Texas.

Ninth Corps Area: Dr. Charles A. Dukes, Oakland, Calif.

Lewis B. Hershey, Director.

DEFERMENT FOR STUDENTS

The Secretary of the Navy recently approved a change in Navy regulations whereby it is now possible for persons who have been accepted for entrance in the next entering class and all medical students in Class A medical colleges and approved dental colleges to be appointed in the United States Naval Reserve with the commission Ensign H-V (P), provided they meet the physical and other requirements for such appointment. It should be noted that this applies not only for persons holding letters of acceptance and freshmen and sophomore students in these medical and dental schools but also juniors and seniors.

The Secretary of War has recently approved a change in Army Regulations which authorizes the commission as Second Lieutenant, Medical Administrative Corps, Army of the United States, of all students in class A medical colleges and to those persons who have matriculated in these colleges, providing they meet the physical and other requirements for such appointment. It should be noted that this opportunity includes freshmen and sophomores as well as juniors and seniors.

For commission in the Navy, application forms may be obtained from the dean's office or from some one designated by him, or from the commandant of the naval district in which the applicant resides. Further information may be obtained from the office of the commandant of any naval district.

For commission in the Army, applications should be made through the office of the dean to the corps area surgeon of the corps area in which the applicant resides.

Students of the Medical Reserve Officers' Training Corps should continue as before, with a view of obtaining commissions as

First Lieutenant, Medical Reserve Corps, on graduation.

Students who hold commissions come under the jurisdiction of the Army and Navy authorities and are not subject to induction under the Selective Service acts. The Army and Navy authorities will defer calling these officers to active duty until they have completed their medical education.

All students who are disqualified physically for commissions should apply for deferment in accordance with the instructions already referred to.

RECENT GRADUATES

After successful completion of his medical college course every individual holding commission as Second Lieutenant, Medical Administrative Corps, Army of the United States, should make immediate application to the Adjutant General, United States Army, Washington, D. C., for appointment as First Lieutenant, Medical or Dental Corps, Army of the United States. Every individual holding commission as Ensign H-V (P), U. S. Naval Reserve, should make immediate application to the commandant of his naval district for commission as Lieutenant (j. g.), Medical or Dental Corps Reserve, U. S. Navy. If appointment is desired in the grade of Lieutenant (j. g.) in the regular Medical Corps or Dental Corps of the U. S. Navy, application should be made to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

The Public Health Service contacts senior and junior medical students for the purpose of interesting the students in applying for positions as internes, following the successful completion of the school year. In addition the students that are accepted are offered commissions in the reserve, to be inactive during the period of their internship and to become active following the successful completion of their internship.

TWELVE MONTHS INTERNES

All internes should apply for commissions as First Lieutenant, Medical or Dental Corps, Army of the United States, or as Lieutenant (j. g.), United States Navy or Naval Reserve. After completion of twelve months' internship, except in rare instances in which the necessity of continuation as a member of the staff or as a resident can be defended by the institution, all who are physically fit may

be required to enter military service. Those commissioned may then expect to enter military service in their professional capacity as medical or dental officers.

HOSPITAL STAFF MEMBERS

Internes with more than twelve months of internship, assistant residents, fellows, residents, junior staff members and staff members under the age of 45 fall within the provisions of the Selective Service acts.

All such men holding Army commissions are subject to call at any time. Temporary deferment is possible if an application made by the institution to the Adjutant General of the United States Army certifying that the individual is temporarily indispensable is approved.

All such men holding Naval Reserve commissions are subject to call at any time, at the discretion of the Secretary of the Navy. Temporary deferments are granted only on approval of applications made by the institution to the Surgeon General of the Navy.

THOSE UNDER 45

All male physicians, dentists or veterinarians under 45 are liable for military service. That their services may be utilized in a professional capacity as officers, they should be made available through the facilities of the Procurement and Assignment Service. Wherever possible, their present positions in civil life should be filled or provisions made for filling their positions, if necessary, by (a) those who are over 45, (b) those under 45 who are physically disqualified for military service, (c) women and (d) instructors and those engaged in research who do not possess M. D., D. D. S. or D. V. M. degrees but whose utilization would make available physicians, dentists or veterinarians for military service.

THOSE OVER 45

All physicians, dentists or veterinarians over 45 should enroll with the Procurement and Assignment Service. Every possible effort will be made to retain those who are essential in their present capacities. Those who are available for assignment to military, governmental, industrial or civil agencies may be asked by the Procurement and Assignment Service to serve those agencies.

MAINTAINING EDUCATIONAL, INDUSTRIAL AND
CIVILIAN MEDICAL, DENTAL AND
VETERINARY SERVICES

Faculties of Schools.—Authorities in medical, dental and veterinary schools have forwarded lists to the Procurement and Assignment Service containing the names of members of their faculties who are considered essential to a proper continuation of medical, dental and veterinary education. These lists will be consulted in determining those who are considered essential. Should the status of any individual listed as essential for teaching be changed, the Procurement and Assignment Service should be immediately notified by the college authorities.

Research.—The burden of proof as to the essential character of research set forth as a reason for deferment rests on the individual and the employing institution. Efforts will be made to maintain without interruption the progress of scientific research, particularly that related to the war effort.

Civil Practice.—The Procurement and Assignment Service will do its utmost to maintain a supply of medical, dental and veterinary services for all industrial and civilian needs. Already the state and county medical, dental and veterinary societies, under the direction of state chairmen, are assembling lists of physicians, dentists and veterinarians considered essential in the positions they now occupy.

ADVISORY COMMITTEES AND LIAISON OFFICERS

On recommendations of the Directing Board of the Procurement and Assignment Service, the Office of Defense Health and Welfare Services has appointed the following advisory committees and consultants to the Procurement and Assignment Service: Dentistry, Veterinary Medicine, Hospitals, Women Physicians, Industrial Health and Medicine, Medical Education, Negro Physicians and Public Health.

These committees are advisory to the Directing Board in establishing policies regarding the availability and utilization of personnel in their respective fields.

THE COMMITTEE ON INFORMATION

With its consultants, the Committee on Information is charged with disseminating information to all physicians, dentists and veterinarians and to the public in order that they may be kept informed of the progress of the Procurement and Assignment Ser-

vice, and in order to secure their cooperation in its activities (appendix 1).

LIAISON OFFICERS

Each of the governmental agencies utilizing the services of physicians, dentists and veterinarians has appointed a liaison officer to advise and assist the Procurement and Assignment Service (appendix 1).

SPECIAL INFORMATION

Specialization.—In general, determination as to special qualifications of persons entering the medical services of the Army and Navy depends on the classification of specialists by advisory committees established through the Division of Medical Sciences of the National Research Council and certifications of boards in the various specialties. Moreover, the recommendations of state and county committees and the statements of the individuals on questionnaires will be taken into consideration. On questions of dental and veterinary specialization, the official organization will be consulted.

Citizenship.—Regulations of the United States Army and Navy do not permit the commissioning of officers who are not citizens of the United States. A commission in the United States Navy requires full citizenship for a period of ten years, and the ten year period to have been spent in the United States. Similarly, all federal agencies utilizing physicians, dentists and veterinarians now demand citizenship as a prerequisite to such enrolment.

Persons who do not possess full citizenship papers but who have been licensed to practice in any of the states of the United States should enroll with the Procurement and Assignment Service so that their services may be utilized when the opportunity arises. They should, however, do their utmost to continue in their efforts to secure citizenship to enable them to qualify for positions that they are not able to fill because of lack of these essentials.

Physicians, dentists or veterinarians who have their first citizenship papers but who do not have a license to practice and who are under the age of 45 come within the provisions of the Selective Service acts and may be inducted in the capacity of enlisted men. When this occurs, these should make known their special capacities, so that their services may be utilized to the fullest extent in the

medical departments of the Army and Navy in an enlisted capacity.

College Qualifications.—Commissions in the medical departments of the United States Army and Navy and in federal agencies are granted only to graduates of schools recognized by such agencies. For physicians, twelve months of internship or its equivalent is required.

Those wishing further information concerning the qualifications necessary to appear for examination leading to a commission in the Army or Navy or to service with any other governmental service should apply directly to such agency.

Women Physicians, Dentists and Veterinarians.—The United States Army and Navy do not permit the commissioning of women physicians, dentists or veterinarians. However, all should enroll with the Procurement and Assignment Service so that they may be recommended to such positions as are available in other federal agencies, industry or civilian capacities in which their services may be required.

The needs will no doubt be particularly acute in local, state and national institutions, in teaching and staff positions and in special occupations with the Office of Civilian Defense in the care of women and children under emergency conditions.

APPENDIX I.—PROCUREMENT AND ASSIGNMENT SERVICE.—CENTRAL ORGANIZATION

OFFICE OF DEFENSE HEALTH AND WELFARE SERVICES

DIRECTING BOARD

Dr. Frank H. Lahey, Chairman, President, American Medical Association, 605 Commonwealth Avenue, Boston.

Dr. Harvey B. Stone, Vice Chairman, Associate Professor of Surgery, Johns Hopkins University School of Medicine, 18 West Franklin Street, Baltimore.

Dr. C. Willard Camalier, Chairman, Dental Preparedness Committee, American Dental Association, 1726 Eye Street N. W., Washington, D. C.

Dr. Harold S. Diehl, Dean of Medical Sciences, University of Minnesota, Minneapolis.

Dr. James E. Paullin, 384 Peachtree Street N. E., Atlanta, Ga.

Dr. Sam F. Seeley, Executive Officer.

LIAISON OFFICERS

Major Paul A. Paden, M. C., Office of the Surgeon General, War Department, Room 1113-B, 1818 H Street N. W., Washington, D. C.

Commander Thomas B. Mcgath, Medical Officers Reserve Section, U. S. Navy, Washington, D. C.

Dr. Paul M. Stewart, U. S. Public Health Service, 23d and Constitution Avenue N. W., Washington, D. C.

Lieut. Col. Richard H. Eanes, M. C., Selective Service System, Potomac Park Apartment, 21st and C Streets N. W., Washington, D. C.

Dr. Hugo Mella, Veterans Administration, Washington, D. C.

Dr. George Baehr, Chief Medical Officer, Office of Civilian Defense, DuPont Circle Building, Washington, D. C. Tel. Republic 5050, Ext. 505.

Dr. Edwin F. Daily, Director, Division of Health Services, Children's Bureau, Department of Labor, Washington, D. C.

Dr. Verne K. Harvey, U. S. Civil Service Commission, Washington, D. C.

ADVISORY COMMITTEES

DENTISTRY

Dr. John T. O'Rourke, Chairman, Dean of Dental School, University of Louisville, Louisville, Ky.

Dr. Leroy M. S. Miner, Vice Chairman, Dean of Dental School, Harvard University, Boston.

Dr. Frederick B. Noyes, 55 E. Washington Street, Chicago.

Dr. Guy S. Millberry, R. F. D. No. 2, Box 181, Los Gatos, Calif.

Dr. B. K. Westfall, 1006 Hume-Mansur Building, Indianapolis.

CONSULTANT

Dr. Gerald D. Timmons, Executive Secretary, American Dental Association, 212 East Superior Street, Chicago.

HOSPITALS

Dr. Winford H. Smith, Chairman, Director, Johns Hopkins Hospital, Baltimore.

Dr. Nathaniel W. Faxon, Vice Chairman, Director, Massachusetts General Hospital, Boston.

Dr. Claude W. Munger, Director, St. Luke's Hospital, 421 W. 113th Street, New York.

Dr. M. T. MacEachern, Associate Director, American College of Surgeons, 40 East Erie Street, Chicago.

Rev. Fr. Alphonse M. Schwitalla, Dean, St. Louis University School of Medicine, 1402 South Grand Boulevard, St. Louis.

INDUSTRIAL HEALTH AND MEDICINE

Dr. C. D. Selby, Chairman, Medical Director, General Motors Corporation, Detroit.

Dr. A. J. Lanza, Vice Chairman, Assistant Medical Director, Metropolitan Life Insurance Company, 1 Madison Avenue, New York.

Mr. William Yant, Director of Research and Development, Mine Safety Appliance Company, Braddock, Thomas & Meade Streets, Pittsburgh.

Dr. Lloyd Noland, Chief Surgeon, Tennessee Coal, Iron and Railroad Company, Fairfield, Ala.

Dr. E. C. Holmblad, 28 East Jackson Boulevard, Chicago.

Professor Philip Drinker, Department of Industrial Hygiene, School of Public Health, Harvard University, 55 Shattuck Street, Boston.

Dr. George M. Smith, Department of Anatomy, Yale University School of Medicine, New Haven, Conn.

MEDICAL EDUCATION

Dr. C. Sidney Burwell, Chairman, Dean, Harvard University Medical School, 25 Shattuck Street, Boston.

Dr. William S. Middleton, Vice Chairman, Dean of Medical School, University of Wisconsin, 1300 University Avenue, Madison, Wis.

Dr. Willard C. Rappleye, Dean, College of Physicians and Surgeons, Columbia University, 630 West 168th Street, New York.

Dr. John H. Musser, Professor of Medicine, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans.

Dr. Loren R. Chandler, Dean, School of Medicine, Stanford University, San Francisco.

NEGRO HEALTH

Dr. M. O. Bousfield, Chairman, Director of Negro Health, Julius Rosenwald Fund, 4901 Ellis Avenue, Chicago.

Dr. Russell A. Dixon, Vice Chairman, Dean, College of Dentistry, Howard University, Washington, D. C.

Dr. G. Hamilton Francis, 1024 East Liberty Street, Norfolk, Va.

Mr. A. W. Dent, Superintendent, Flint Goodridge Hospital, New Orleans.

Dr. A. N. Vaughn, Surgeon, Homer G. Philips Hospital, St. Louis.

PUBLIC HEALTH

Dr. Carl V. Reynolds, Chairman, 216 West Jones Street, Raleigh, N. C.

Dr. Harry S. Mustard, Vice Chairman, DeLamar Institute of Public Health, 600 West 168th Street, New York.

Dr. Gavlord West Anderson, University of Minnesota, Minneapolis.

Dr. Waller S. Leathers, School of Medicine, Vanderbilt University, Nashville, Tenn.

Dr. John L. Rice, 125 Worth Street, New York.

VETERINARY MEDICINE

Dr. John G. Hardenbergh, Chairman, Executive Secretary, American Veterinary Medical Association, 600 South Michigan Avenue, Chicago.
Dr. John R. Mohler, Vice Chairman. Chief, Bureau of Animal Industry, U. S. Department of Agriculture, Washington, D. C.
Dr. Harry W. Jakeman, President, American Veterinary Medical Association, 44 Bromfield Street, Boston.
Dr. William A. Hagan, Dean, New York State Veterinary College, Cornell University, Ithaca, N. Y.
Dr. Cassius Way, 25 Vanderbilt Avenue, New York.

WOMEN PHYSICIANS

Dr. Sara Murray Jordan, Chairman, 605 Commonwealth Avenue, Boston.
Dr. Margaret D. Craighill, Vice Chairman, Dean, Woman's Medical College of Pennsylvania, East Falls, Philadelphia.
Dr. Ruth Evelyn Boynton, University of Minnesota, Minneapolis.
Dr. Ada Chree Reid, Executive Secretary, American Medical Women's Association, 102 E. 22d Street, New York.
Dr. Irma Jackson, Forest Hills Inn, Forest Hills, N. Y.

INFORMATION

Dr. Morris Fishbein, Chairman, Editor, Journal American Medical Association, 535 North Dearborn Street, Chicago.
Dr. Ira V. Hiscock, Vice Chairman, Yale University School of Medicine, New Haven, Conn.
Mr. J. J. Bloomfield, Sanitary Engineer, U. S. Public Health Service, National Institute of Health, Bethesda, Md.
Dr. John F. Fulton, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn.
Dr. Richard M. Hewitt, Mayo Clinic, Rochester, Minn.
Dr. Sanford V. Larkey, Division of Medical Sciences, National Research Council, 2101 Constitution Avenue, Washington, D. C.
Dr. Robert N. Nye, Managing Editor, New England Journal of Medicine, 8 Fenway, Boston.

CONSULTANTS

Mr. Watson Davis, 1719 N Street, N. W., Washington, D. C.
Mr. David Dietz, Science Editor, Scripps-Howard Newspapers, United Press, Cleveland Press Building, Cleveland.
Mr. William Laurence, New York Times, New York.
Mr. Arthur T. Robb, Editor of Editor and Publisher, 1475 Broadway, New York.
Dr. Gerald D. Timmons, Executive Secretary, American Dental Association, 212 East Superior Street, Chicago.
Dr. John G. Hardenbergh, Executive Secretary, American Veterinary Medical Association, 600 South Michigan Avenue, Chicago.

APPENDIX 2—REGIONAL ORGANIZATIONS

FIRST CORPS AREA

CORPS AREA COMMITTEE

Chairman—Dr. W. G. Phippen, 31 Chestnut Street, Salem, Mass.
Physicians—Dr. Deering G. Smith, 77 Main Street, Nashua, N. H.; Dr. Lucius Kingman, 76 Waterman Street, Providence, R. I.
Dentist—Dr. Philip E. Adams, 106 Marlboro Street, Boston.
Veterinarian—Dr. R. W. Smith, Concord, N. H.
Hospital Representative—Dr. Nathaniel Faxon, Massachusetts General Hospital, Boston.
Medical Education Representative—Dr. C. Sidney Burwell, 25 Shattuck Street, Boston.

STATE CHAIRMEN IN FIRST CORPS AREA

CONNECTICUT

Medical—Dr. Creighton Barker, 258 Church Street, New Haven.
Dental—Dr. Louis R. Siegal, 750 Main Street, Hartford.
Veterinary Medical—Dr. Edwin Laitinen, 993 N. Main Street, West Hartford.

MAINE

Medical—Dr. John G. Towne, 135 Main Street, Waterville.

Dental—Dr. Giles C. Grant, 655 Congress Street, Portland.
Veterinary Medical—Dr. P. R. Baird, 52 Pleasant Street, Waterville.

MASSACHUSETTS

Medical—Dr. Reginald Fitz, 319 Longwood Avenue, Boston.
Dental—Dr. Andrew J. Rafferty, 390 Main Street, Worcester.
Veterinary Medical—Dr. Harrie W. Pierce, 100 Nashua Street, Boston.

NEW HAMPSHIRE

Medical—Dr. Deering G. Smith, 77 Main Street, Nashua.
Dental—Dr. William H. Putney, 85 Pleasant Street, Concord.
Veterinary Medical—Dr. R. W. Smith, State House, Concord.

RHODE ISLAND

Medical—Dr. Halsey DeWolf, 199 Thayer Street, Providence.
Dental—Dr. E. C. Elliott, 615 Union Trust Bldg., Providence.
Veterinary Medical—Dr. J. S. Barber, 560 Pleasant Street, Pawtucket.

VERMONT

Medical—Dr. Benjamin F. Cook, 46 Nichols Street, Rutland.
Dental—Dr. Maxwell L. Jameson, 69 Pine Street, Burlington.
Veterinary Medical—Dr. A. A. Mortimer, 27 Central Street, Randolph.

SECOND CORPS AREA

CORPS AREA COMMITTEE

Chairman—Dr. A. W. Booth, 222 West Church Street, Elmira, N. Y.
Physicians—Dr. Samuel J. Kopetzky, 71 East 80th Street, New York; Dr. W. J. Carrington, 905 Pacific Avenue, Atlantic City, N. J.
Dentists—Dr. William McG. Burns, 80 Hanson Place, Brooklyn; Dr. Allen T. Newman, 209 East 23d Street, New York.
Veterinarian—Dr. R. R. Birch, Route 2, Ithaca, N. Y.
Hospital Representative—Dr. Claude W. Munger, St. Luke's Hospital, New York.
Medical Education Representative—Dr. Willard C. Rappleye, Columbia University Medical School, New York.

STATE CHAIRMEN IN SECOND CORPS AREA

DELAWARE

Medical—Dr. William H. Speer, 917 Washington Street, Wilmington.
Dental—Dr. William Stewart, Medical Arts Building, Wilmington.
Veterinary Medical—Dr. Harry McDaniel, Jr., State Board of Agriculture, Dover.

NEW JERSEY

Medical—Dr. Charles H. Schlichter, 143 E. State Street, Trenton.
Dental—Dr. E. C. Stillwell, 815 Bloomfield, Glen Ridge.
Veterinary Medical—Dr. A. W. Smith, 8 Longview Road, Livingston.

NEW YORK

Medical—Dr. Samuel J. Kopetzky, 71 E. 80th Street, New York.
Dental—Dr. William McG. Burns, 80 Hanson Place, Brooklyn.
Veterinary Medical—Dr. Albert L. Brown, Route 1, Adams.

THIRD CORPS AREA

CORPS AREA COMMITTEE

Chairman—Dr. A. M. Shipley, University Hospital, Baltimore.
Physicians—Dr. C. H. Henninger, 500 Penn Avenue, Pittsburgh; Dr. Hugh H. Trout, 1301 Franklin Road, Roanoke, Va.

Dentists.—Dr. B. Lucien Brun., 827 Park Avenue, Baltimore; Dr. Harry Bear, 410 Professional Bldg., Richmond, Va.

Veterinarian.—Dr. Mark Welsh, College Park, Md.

Hospital Representative.—Dr. Winford H. Smith, Johns Hopkins Hospital, Baltimore.

Medical Education Representative.—Dr. William Pepper, University of Pennsylvania School of Medicine, Philadelphia.

STATE CHAIRMEN IN THIRD CORPS AREA

MARYLAND

Medical.—Dr. Charles W. Maxson, 827 N. Charles Street, Baltimore.

Dental.—Dr. T. J. Bland, Medical Arts Building, Baltimore.

Veterinary Medical.—Dr. A. L. Brueckner, College Park.

PENNSYLVANIA

Medical.—Dr. Charles H. Henninger, 500 Penn Avenue, Pittsburgh.

Dental.—Dr. R. H. Nones, 1930 Chestnut Street, Philadelphia.

Veterinary Medical.—Dr. Ernest W. Hogg, 20 Darling Street, Wilkes-Barre.

VIRGINIA

Medical.—Dr. Hugh H. Trout, 1301 Franklin Road, Roanoke.

Dental.—Dr. J. H. John, Medical Arts Bldg., Roanoke.

Veterinary Medical.—Dr. I. D. Wilson, Virginia Polytechnic Institute, Blacksburg.

DISTRICT OF COLUMBIA

Medical.—Dr. Francis X. McGovern, 1835 Eye Street, N. W., Washington, D. C.

Dental.—Dr. George Albert Smith, 1835 Eye Street, N. W., Washington, D. C.

Veterinary Medical.—Dr. A. E. Wight, Bureau of Animal Industry, U. S. Department of Agriculture, Washington, D. C.

FOURTH CORPS AREA

CORPS AREA COMMITTEE

Chairman.—Dr. Edgar Greene, 478 Peachtree Street N. E., Atlanta, Ga.

Physicians.—Dr. Alfred A. Walker, 2250 Highland Avenue, Birmingham, Ala.; Dr. Edward H. Jelks, P. O. Box 1018, Jacksonville, Fla.

Dentists.—Dr. Claude R. Wood, 606 Medical Arts Building, Knoxville, Tenn.; Dr. Ralph R. Byrnes, 106 Forest Avenue N. E., Atlanta, Ga.

Veterinarian.—Dr. B. T. Simms, Regional Animal Disease Research Laboratory, Auburn, Ala.

Hospital Representative.—Dr. J. Moss Beeler, Grady Hospital, Atlanta, Ga.

Medical Education Representative.—Dr. R. H. Oppenheimer, 50 Armstrong Street, Atlanta, Ga.

STATE CHAIRMAN IN FOURTH CORPS AREA

ALABAMA

Medical.—Dr. B. F. Austin, 519 Dexter Avenue, Montgomery.

Dental.—Dr. C. B. Bray, American Cast Iron Pipe Company, Birmingham.

Veterinary Medical.—Dr. R. S. Sugg, School of Veterinary Medicine Alabama Polytechnic Institute, University.

FLORIDA

Medical.—Dr. Edward Jelks, Box 1018, Jacksonville.

Dental.—Dr. E. C. Lunsford, 126 W. San Marius, Miami.

Veterinary Medical.—Dr. J. L. Ruble, 1600 N. Orange Ave., Orlando.

GEORGIA

Medical.—Dr. Edgar H. Greene, 478 Peachtree Street N. E., Atlanta.

Dental.—Dr. R. H. Murphy, 920 Persons Building, Macon.

Veterinary Medical.—Dr. J. M. Sutton, Sylvester.

LOUISIANA

Medical.—Dr. C. Grenes Cole, 921 Canal Street, New Orleans.

Dental.—Dr. Larry Dupuy, 837 Maison Blanche Building, New Orleans.

Veterinary Medical.—Dr. E. P. Flower, Box 24, Baton Rouge.

MISSISSIPPI

Medical.—Dr. T. M. Dye, Box 295, Clarksdale.

Dental.—Dr. George P. Evans, Standard Life Building, Jackson.

Veterinary Medical.—Dr. E. S. Brashier, State Vet. & Exec. Off., Mississippi State Live Stock San. Bd., Jackson.

NORTH CAROLINA

Medical.—Dr. Hubert B. Haywood, 127 W. Hargett St., Raleigh.

Dental.—Dr. H. O. Lineberger, 804 Professional Building, Raleigh.

Veterinary Medical.—Dr. William Moore, State Veterinarian, Raleigh.

SOUTH CAROLINA

Medical.—Dr. W. L. Pressly, Due West.

Dental.—Dr. E. W. Sheperd, Spartanburg.

Veterinary Medical.—Dr. R. A. Mays, J. C. Calhoun State Office Building, Columbia.

TENNESSEE

Medical.—Dr. W. C. Dixon, 706 Church Street, Nashville.

Dental.—Dr. Lawrence T. Kennedy, Medical Arts Building, Knoxville.

Veterinary Medical.—Dr. M. Jacob, University of Tennessee, Knoxville.

FIFTH CORPS AREA

CORPS AREA COMMITTEE

Chairman.—Dr. E. L. Henderson, 606 S. 4th Street, Louisville, Ky.

Physicians.—Dr. Robert Conard, Hartman Theater Building, Columbus, Ohio; Dr. Larue Carter, 1820 E. 10th Street, Indianapolis.

Dentists.—Dr. Earl D. Lowry, 79 E. State Street, Columbus, Ohio; Dr. Wendell D. Postle, 1714 N. High Street, Columbus, Ohio.

Veterinarian.—Dr. A. F. Schalk, Ohio State University, Columbus, Ohio.

Hospital Representative.—Dr. Robert H. Bishop, 2065 Adelbert Road, Cleveland.

Medical Education Representative.—Dr. Hardy A. Kemp, Ohio State University Medical School, Columbus, Ohio.

STATE CHAIRMEN IN FIFTH CORPS AREA

INDIANA

Medical.—Dr. Charles R. Bird, 23 E. Ohio Street, Indianapolis.

Dental.—Dr. H. T. Berkey, Wayne Pharmacal Building, Fort Wayne.

Veterinary Medical.—Dr. Charles C. Dobson, New Augusta.

KENTUCKY

Medical.—Dr. Arthur T. McCormack, 620 S. 3d Street, Louisville.

Dental.—Dr. E. C. Hume, Heyburn Building, Louisville.

Veterinary Medical.—Dr. Arthur J. Kay, 517 Murray Street, Frankfort.

OHIO

Medical.—Dr. Robert Conard, Hartman Theater Building, Columbus.

Dental.—Dr. Frank C. Starr, 150 E. Broad Street, Columbus.

Veterinary Medical.—Dr. D. C. Hyde, 1700 Arlington Avenue, Columbus.

WEST VIRGINIA

Medical.—Dr. R. H. Walker, 240 Capitol Street, Charleston.

Dental.—Dr. Ira J. Kail, 1018 First National Bank Bldg., Huntington.

Veterinary Medical.—Dr. H. M. Newton, P. O. Box 1721, Charleston.

SIXTH CORPS AREA

CORPS AREA COMMITTEE

Chairman.—Dr. Charles H. Phifer, 30 North Michigan Avenue, Chicago.
Physicians.—Dr. P. R. Urmston, 916 Washington Avenue, Bay City, Mich.; Dr. Stephen E. Gavin, 104 South Main Street, Fond du Lac, Wis.
Dentists.—Dr. Leo Kremer, 55 East Washington Street, Chicago; Dr. Paul H. Jeserich, W. K. Kellogg Institute, Ann Arbor, Mich.
Veterinarian.—Dr. Ward Giltner, Michigan State College, East Lansing, Mich.
Hospital Representative.—Mr. Joseph G. Norby, Columbia Hospital, Milwaukee.
Medical Education Representative.—Dr. A. C. Bachmeyer, 950 East 59th Street, Chicago.

STATE CHAIRMAN IN SIXTH CORPS AREA

ILLINOIS

Medical.—Dr. Harold M. Camp, 2245 South Main Street, Monmouth.
Dental.—Dr. William I. McNeil, 59 East Madison Street, Chicago.
Veterinary Medical.—Dr. A. E. Bott, 1317 Pennsylvania Ave., East St. Louis.

MICHIGAN

Medical.—Dr. P. R. Urmston, 916 Wash. Avenue, Bay City.
Dental.—Dr. J. O. Goodsell, 2nd Nat. Bank Building, Saginaw.
Veterinary Medical.—Dr. B. J. Killham, Michigan State College, East Lansing.

WISCONSIN

Medical.—Dr. R. E. Fitzgerald, 2750 North Teutonia Avenue, Milwaukee.
Dental.—Dr. Charles Baumann, 408 West Greenfield Avenue, Milwaukee.
Veterinary Medical.—Dr. W. Wisnicky, University of Wisconsin, Madison.

SEVENTH CORPS AREA

CORPS AREA COMMITTEE

Chairman.—Dr. Roy W. Fouts, 107 South 17th Street, Omaha.
Physicians.—Dr. F. L. Loveland, 109 West 9th Street, Topeka, Kan.; Dr. Robert L. Parker, 3510 6th Avenue, Des Moines, Iowa.
Dentists.—Dr. F. A. Pierson, 1112 Federal Security Building, Lincoln, Neb.; Dr. A. W. Bryan, Box 727, Iowa City.
Veterinarian.—Dr. H. D. Bergman, Iowa State College, Ames, Iowa.
Hospital Representative.—Mr. Robert E. Neff, University Hospital, Iowa City.
Medical Education Representative.—Dr. C. W. N. Poynter, 42d Street and Dewey Avenue, Omaha.

STATE CHAIRMAN IN SEVENTH CORPS AREA

ARKANSAS

Medical.—Dr. W. R. Brooksher, 602 Garrison Avenue, Fort Smith.
Dental.—Dr. I. M. Sternberg, 1st National Bank Building, Fort Smith.
Veterinary Medical.—Dr. Joe S. Campbell, Route 4, Little Rock.

IOWA

Medical.—Dr. T. F. Suchomel, 305 2d Street, Cedar Rapids.
Dental.—Dr. John Voss, Voss Building, Iowa City.
Veterinary Medical.—Dr. A. R. Menary, 1721 Blake Boulevard, Cedar Rapids.

KANSAS

Medical.—Dr. F. L. Loveland, 109 West 9th Street, Topeka.
Dental.—Dr. John W. Richmond, Huron Building, Kansas City.
Veterinary Medical.—Dr. R. R. Dykstra, Kansas State College, Manhattan.

MINNESOTA

Medical.—Dr. William F. Braasch, 102 2d Street, Rochester.
Dental.—Dr. J. P. Werrick, Medical Arts Building, Minneapolis.
Veterinary Medical.—Dr. C. E. Cotton, 3145 Portland Avenue, Minneapolis.

MISSOURI

Medical.—Dr. Robert Mueller, 3115 South Grand Avenue, St. Louis.
Dental.—Dr. R. J. Rinehart, K. C. Western Dental College, Kansas City.
Veterinary Medical.—Dr. S. W. Haigler, 7645 Delmar Boulevard, St. Louis.

NEBRASKA

Medical.—Dr. A. A. Conrad, Crete.
Dental.—Dr. Lawrence A. Donahoe, 1128 City National Bank Building, Omaha.
Veterinary Medical.—Dr. W. T. Spencer, Livestock Exchange Building, Omaha.

NORTH DAKOTA

Medical.—Dr. L. W. Larson, 221 5th Street, Bismarck.
Dental.—Dr. A. O. Schjeldahl, 523½ 5th Avenue, Valley City.
Veterinary Medical.—Dr. R. E. Shigley, 710 2d Street S. E., Minot.

SOUTH DAKOTA

Medical.—Dr. William Duncan, Webster.
Dental.—Dr. R. W. Ellis, Salem.
Veterinary Medical.—Dr. D. L. Cotton, Beresford.

WYOMING

Medical.—Dr. George H. Phelps, 1606 Capitol Avenue, Cheyenne.
Dental.—Dr. L. C. Hunt, 308 West 3d Avenue, Cheyenne.
Veterinary Medical.—Dr. H. D. Port, 304 Capitol Building, Cheyenne.

EIGHTH CORPS AREA

CORPS AREA COMMITTEE

Chairman.—Dr. Sam E. Thompson, Kerrville, Texas.
Physicians.—Dr. Holman Taylor, 1404 West El Paso Street, Fort Worth, Texas; Dr. John W. Ames, 227 16th Street, Denver.
Dentists.—Dr. T. G. Duckworth, 915 Medical Arts Building, San Antonio, Texas; Dr. Fred C. Elliott, 1018 Blodgett Avenue, Houston, Texas.
Veterinarian.—Dr. M. B. Starnes, City Health Department, Dallas, Texas.
Hospital Representative.—Mr. Frank Walter, St. Luke's Hospital, Denver.
Medical Education Representative.—Dr. Maurice H. Rees, 4200 East 9th Avenue, Denver.

STATE CHAIRMAN IN EIGHTH CORPS AREA

ARIZONA

Medical.—Dr. Charles S. Smith, Nogales.
Dental.—Dr. W. A. Baker, Professional Building, Phoenix.
Veterinary Medical.—Dr. T. B. Jones, 105 Capitol Building, Phoenix.

COLORADO

Medical.—Dr. John Ames, 227 16th Street, Denver.
Dental.—Dr. E. M. Silverberg, 809 Republic Building, Denver.
Veterinary Medical.—Dr. Floyd Cross, Colorado State College, Fort Collins.

NEW MEXICO

Medical.—Dr. L. B. Cohenour, 221 Central Avenue, Albuquerque.
Dental.—Dr. H. R. Chapin, El Moro Building, Gallup.
Veterinary Medical.—Dr. S. W. Wiest, Box 75, Santa Fe.

OKLAHOMA

Medical.—Dr. Henry H. Turner, 1200 North Walker, Oklahoma City.
Dental.—Dr. A. C. Seids, 1200 North Walker, Oklahoma City.
Veterinary Medical.—Dr. L. J. Allen, 1610 North Ellison, Oklahoma City.

TEXAS

Medical.—Dr. Holman Taylor, 1404 West El Paso Street, Fort Worth.

Dental.—Dr. J. E. Robinson, Medical Arts Building, San Antonio.

Veterinary Medical.—Dr. T. O. Booth, 2002 W. T. Waggoner Building, Fort Worth.

NINTH CORPS AREA

CORPS AREA COMMITTEE

Chairman.—Dr. Charles A. Dukes, 426 17th Street, Oakland, Calif.

Physicians.—Dr. John H. Fitzgibbon, 812 S. W. Washington, Portland, Ore.; Dr. John M. O'Shea, 422 Riverside Avenue, Spokane, Wash.

Dentists.—Dr. B. C. Kingsbury, 490 Post Street, San Francisco; Dr. E. O. Sloman, 344 14th Street, San Francisco.

Veterinarian.—Dr. C. M. Haring, University of California, Berkeley, Calif.

Hospital Representative.—Dr. Benjamin W. Black, 2701 14th Avenue, Oakland, Calif.

Medical Education Representative.—Dr. Loren R. Chandler, Stanford University, School of Medicine, San Francisco.

STATE CHAIRMAN IN NINTH CORPS AREA

CALIFORNIA

Medical.—Dr. Harold A. Fletcher, 490 Post Street, San Francisco.

Dental.—Dr. Kenneth Ruedy, 3780 Wilshire Boulevard, Los Angeles; Dr. John W. Leggett, 490 Post Street, San Francisco.

Veterinary Medical.—Dr. Joseph M. Arburua, 26 Fell Street, San Francisco.

IDAHO

Medical.—Dr. F. M. Cole, Caldwell.

Dental.—Dr. J. E. Bennett, Idaho Falls.

Veterinary Medical.—Dr. Arthur P. Schneider, 2519 Boise.

MONTANA

Medical.—Dr. Herbert Caraway, 115 North 28th Street, Billings.

Dental.—Dr. D. H. McCauley, 9 First Avenue, Laurel.

Veterinary Medical.—Dr. W. J. Butler, care Capitol Station, Helena.

NEVADA

Medical.—Dr. C. W. West, 120 North Virginia Street, Reno.

Dental.—Dr. G. C. Steinmiller, Masonic Temple, Reno.

Veterinary Medical.—Dr. Edward Records, University of Nevada, Reno.

OREGON

Medical.—Dr. Wilson Johnston, 1020 S. W. Taylor Street, Portland.

Dental.—Dr. N. L. Zimmerman, Medical Dental Building, Portland.

Veterinary Medical.—Dr. Fred W. Lange, 855 Belmont Street, Salem.

UTAH

Medical.—Dr. John F. Sharp, 75 S. Main, Salt Lake City.

Dental.—Dr. C. O. Robinson, Medical Arts Building, Salt Lake City.

Veterinary Medical.—Dr. W. H. Hendricks, 1419 East 17th South Street, Salt Lake City.

WASHINGTON

Medical.—Dr. Raymond Zech, 509 Olive Way, Seattle.

Dental.—Dr. L. L. Foote, Medical & Dental Building, Seattle.

Veterinary Medical.—Dr. M. O. Barnes, 203 Federal Building, Olympia.

APPENDIX 3.—ADDRESSES OF NAVAL
COMMANDANTS

The addresses of commandants of the several naval districts and the limits of their jurisdiction as far as Naval Reserve is concerned are:

Commandant, 1st Naval District, North Station Office Building, 150 Causeway Street, Boston. (States of Maine, Massachusetts, New Hampshire, Vermont, and Rhode Island, including Block Island.)

Commandant, 3d Naval District, Federal Building, 90 Church Street, New York. (States of New York, Connecticut, and upper New Jersey, including counties of Mercer, Monmouth, and all counties north thereof, also Nantucket Shoals Lightship.)

Commandant, 4th Naval District, Navy Yard, Philadelphia. (States of Pennsylvania, southern part of New Jersey, including counties of Burlington, Ocean, and all counties south thereof; Delaware, including Winters Quarter Shoal Light Vessel.)

Commandant, 5th Naval District, Naval Operating Base, Norfolk, Va. (States of Maryland, except Prince Georges, Montgomery, and Charles Counties; Virginia, except Arlington, Fairfax, Stafford, King George, and Prince William Counties, and the city of Alexandria; West Virginia, and the counties of Currituck, Camden, Pasquotank, Gates, Perquimans, Chowan, Dare, Tyrrell, Washington, Hyde, Beaufort, Pamlico, Craven, Jones, Carteret and Onslow in North Carolina, also the Diamond Shoal Lightship.)

Commandant, 6th Naval District, Navy Yard, Charleston, S. C. (States of South Carolina, Georgia, and North Carolina, except the counties of Currituck, Camden, Pasquotank, Gates, Perquimans, Chowan, Dare, Tyrrell, Washington, Hyde, Beaufort, Pamlico, Craven, Jones, Carteret and Onslow.)

Commandant, 7th Naval District, Naval Station, Key West, Fla. (State of Florida, except counties west of Apalachicola River.)

Commandant, 8th Naval District, Federal Building, New Orleans, La. (States of Alabama, Tennessee, Louisiana, Mississippi, Arkansas, Oklahoma, Texas, and Florida, except counties east of Apalachicola River.)

Commandant, 9th Naval District, Naval Training Station, Great Lakes, Ill. (States of Ohio, Michigan, Kentucky, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.)

Commandant, 10th Naval District, San Juan, P. R. (All island possessions of the United States pertaining to Puerto Rico and the Virgin Islands.)

Commandant, 11th Naval District, Naval Operating Base, San Diego, Calif. (States of New Mexico, Arizona, southern part of California, including counties of Santa Barbara, Kern, and San Bernardino, and all counties south thereof.)

Commandant, 12th Naval District, 1095 Market Street, San Francisco, Calif. (States of Colorado, Utah, Nevada, northern part of California, including counties of San Luis Obispo, Kings, Inyo, and Tulare and all counties north thereof.)

Commandant, 13th Naval District, Exchange Building, Seattle, Wash. (States of Washington, Oregon, Idaho, Montana, Wyoming, and Territory of Alaska.)

Commandant, 14th Naval District, Navy Yard, Pearl Harbor, T. H. (Hawaiian Island, and islands westward, including Midway.)

Commandant, 15th Naval District, Naval Station, Balboa, C. Z. (Panama Canal Zone.)

Commandant, 16th Naval District, Naval Station, Cavite, P. I. (Philippine Islands.)

Commandant, Navy Yard, Washington, D. C. (District of Columbia, Prince Georges, Montgomery, and Charles Counties, Maryland; and Arlington, Fairfax, Stafford, King George, and Prince William Counties, Virginia, and the city of Alexandria, Va.)

Committee Contributions

Maternal and Infant Welfare

RURAL OBSTETRICS

The practice of rural obstetrics differs greatly from that in urban centers. The availability of hospital facilities, consultation service from obstetric specialists and better transportation facilities, to say nothing of a tendency toward greater financial recompense, are often thought of as productive of good results. Too often the rural practitioners accept a relatively high incidence of stillbirths and maternal deaths on the basis of lack of facilities such as exist in larger cities. That good obstetrics can be

done in a rural area is clearly demonstrated by the report from the Frontier Nursing Service published recently in the Southern Medical Journal.¹

This service, in a section as rural as any in Alabama, has succeeded in doing obstetrics of such character that its maternal mortality rate is only 1.25 per 1,000 deliveries during the fourteen and one-half years reported. This is approximately a fifth of the rate reported in Alabama in recent years and is a record that many of our large hospitals cannot improve upon. The record is even more impressive when we take into consideration the fact that most of these deliveries were done by trained nurse-midwives and not by physicians. The sound conservative type of obstetrics practiced is evidenced by the low incidence of operative interference. In the last one thousand patients there were only thirteen forceps deliveries, three cesarean sections, five manual removals, and no versions and extractions. Such operative deliveries and other complicated cases are cared for by the Medical Director, a physician with special training in obstetrics.

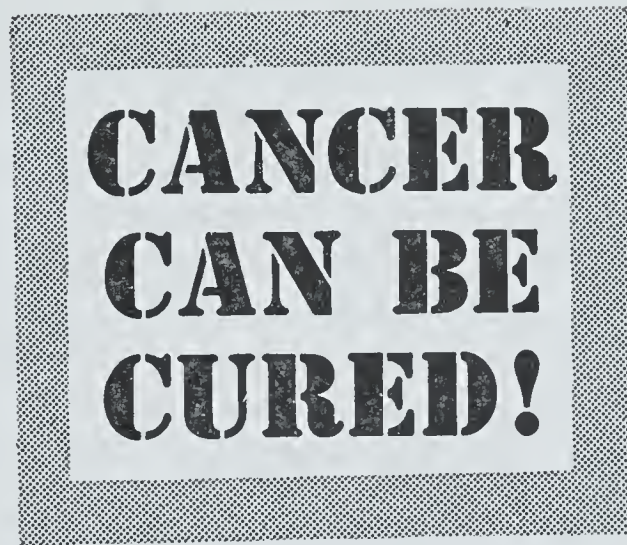
The care given these patients includes a comprehensive program of prenatal care and in the last 1,000 cases 53.7 per cent of the patients were seen ten times or more during their prenatal period. This care was started before the twenty-fifth week in 73.1 per cent of the cases.

The record established by this service clearly points out that the performance of better obstetrics in rural districts is possible. What is more, this service has demonstrated that results rivaling those of the best urban centers can be had.

Prenatal care and sound conservative obstetrics together with preparations for emergencies before they are met would do a great deal to reduce infant and maternal mortality in Alabama.

"There is an abundance of facts to show the need of more and better dental care. The public is aroused by the findings of Selective Service Boards which show that the largest number of deferments due to physical conditions is because of dental deficiencies. Whether the seriousness of such defects is greater than at the time of the previous examinations of drafted men may be open to question. Dental decay is the most prevalent physical defect among school children."

1. Kooser, John H.: Rural Obstetrics, South. M. J. 35: 123 (February) '42.



This is the welcome message your dollar will bring to thousands of cancer sufferers in 1942. Help us carry on the fight.

Enlist in your local field army now.

Buy package labels today.

If you live in the Metropolitan Area, address the New York City Cancer Committee, 130 East 66th Street.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER

New York, New York

Prevention of Cancer

CANCER OF THE OVARY

Cancer of the ovary has few early symptoms unless it is superimposed on a long-standing benign ovarian tumor. Diagnosis is difficult on this account. There are occasional menstrual abnormalities which may or may not be accompanied by abdominal and pelvic discomfort, indigestion, backache, and urinary frequency or discomfort. Occasionally the first symptom may be abdominal enlargement from ascites or from the tumor itself.

One is made suspicious of ovarian cancer by the history and the findings on abdominal and pelvic examination. The positive diagnosis has to be made by laparotomy or peritoneoscopy and microscopic examination of biopsy tissue from the tumor, or identification of malignant cells in the ascitic fluid.

Most carcinomas of the ovary are adenocarcinoma developing in benign cystomas. Their treatment is radical removal of the ovarian tumor, including bilateral oophorectomy and total hysterectomy. If diagnosis of ovarian carcinoma is anticipated, surgical results may be enhanced by preoperative x-ray. Postoperative x-ray is of less value, but is applicable when complete resection of the tumor has not been possible at operation.

In far-advanced incurable cases, x-ray treatment properly used may prolong comfortable life for several years. One should

never conclude that a case is far advanced and hopeless without first making a positive diagnosis as benign ovarian tumors and inflammatory conditions can give a fixed ovarian tumor-mass and ascites. These conditions can be permanently cured by operation.

The prognosis of ovarian carcinoma depends upon how early in the disease adequate treatment is started. A large percentage of early cases are curable if resected intact. The reports for all ovarian cancer from various clinics indicate a five-year curability of from zero to twenty-five per cent.

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

B. F. Austin, M. D.

Acting State Health Officer in Charge

VERTICAL VERSUS HORIZONTAL ADMINISTRATION

(*Editorial, Am. J. Pub. Health, January '42*)

It is interesting to observe that an increasing number of public health workers are becoming conscious of a need for more clearly defined administrative relationships between themselves and their coworkers, between the individual service units within their organization, and between their own organization and other organizations. Even more significant is the fact that many of those who were once unrestrained and vehement champions of one method of administration or another are now, as their programs have expanded and their responsibilities changed, willing to see some virtue in types of organizations and methods of administration which previously they had damned roundly. This developing interest and this new tolerance may be put to good use and perhaps to severe test in bringing about a just peace between the adherents of "horizontal" administration and the proponents of "vertical" organization and procedure. These quoted words, incidentally, are not good terms, but they are generally understood, and for want of better they must be used.

How best to combine the imagination and planned strategy of a technical staff with the stop-gap technics and realities of the firing line is not, of course, a new problem or one confined to public health. It is encountered in industry, in business, in the military ser-

vices, in hospitals, and in fact in any situation where there is a central directing group of specialists on the one hand and on the other far-flung operations of the organization as a whole, under the immediate charge of local directors. In public health administration the objective, naturally, is to provide a smooth and untortuous channel along which the knowledge and facilities of the central organization may flow to and through local units without washing away that authority which the local director must possess if he is to perform successfully. Complete autonomy of the local units, say in the director of a city district or in a county health department, tends to inhibit the flow of technical service and advice from specialists in the central office to their corresponding specialists or technicians serving in the local units. As against this, to have special services of an operating health department, as in tuberculosis or public health nursing, directed by bureau chiefs in a central office, interferes seriously with coordination of the various activities of the local unit and makes it impossible for the director of that unit to function other than as an administrative clerk. Personalities, too, and guild consciousness of those in the many professions or near professions of public health, and even the respectable urge to do a good job of work, seem to have added confusion to this already difficult problem.

No wise man will speak ex-cathedra on this subject, and the more emphatically one argues for either complete vertical or complete horizontal administration the more likely is he to be in error. Central bureau chiefs and the services which they and their staff render are largely concerned with what

to do and how to do it in their respective fields. The local director is responsible not only for insuring high standards in what is done and in the way in which it is done, but also he is the only person in position to decide where to render local service and when and to whom, with the personnel and resources locally available. No victories are won with only staff work, be it ever so brilliant, nor with only tactical officers, be they ever so energetic. What, seemingly, is needed in public health administration is an organization and procedure which will combine provisions for central technical guidance with assurance of responsibility and authority for the local director. It is not probable that any one fixed pattern will serve all places. Wisdom appears to indicate that the best in vertical and horizontal administration be conserved, harmonized, and utilized.

BUREAU OF LABORATORIES

Samuel R. Damon, Ph. D., Director

SPECIMENS EXAMINED

JANUARY 1942

Examinations for diphtheria bacilli and Vincent's.....	1,019
Agglutination tests (typhoid, Brill's, undulant fever)	483
Typhoid cultures (blood, feces and urine)	443
Examinations for malaria	702
Examinations for intestinal parasites	2,288
Serologic tests for syphilis (blood and spinal fluid)	34,519
Darkfield examinations	37
Examinations for gonococci	2,052
Examinations for tubercle bacilli	1,886
Examinations for Negri bodies (microscopic)	44
Water examinations (bacteriologic)	766
Milk examinations	1,951
Pneumococcus typing	25
Miscellaneous	887
Total	47,102

HEMOLYSIS OF BLOOD SPECIMENS

Many blood specimens received in the laboratories for agglutination or Kahn tests are unsatisfactory for examination because of hemolysis. Such specimens are equally disappointing to the laboratory worker, the physician and the patient.

Hemolysis of blood specimens may be obviated by taking proper precautions. Some

frequent causes of hemolysis are: (1) contamination; (2) water in the syringe; (3) discharging blood from the syringe into the tube with force sufficient to break down the corpuscles; (4) exposure to high or low temperatures either in the office or clinic, or in transit to the laboratory; and (5) disturbing the blood during the clotting period.

COOPERATION URGENTLY NEEDED

In the present emergency it is becoming increasingly difficult for the Bureau of Laboratories to obtain adequate supplies of many items, especially glassware, rubber and cork stoppers, and specimen containers. Physicians, health officers, hospitals and institutions can be of great help by returning promptly to their local supply stations all empty vials or those containing outdated or partially used products, culture and other specimen tubes, corks, rubber stoppers, mailing containers, and other items that have been furnished with state preparations or diagnostic outfits. Full cooperation is very important and will be greatly appreciated.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

THE EMPHASIS ON VENEREAL DISEASE CONTROL IN WAR TIME

Among the causes for rejection for army service the venereal diseases rank high, and at the present time thousands of potential soldiers are being turned down because of a venereal infection that has not been adequately treated. Regardless of the conditions responsible for that infection, there is a real responsibility being placed on the medical profession to see that every case is properly and promptly treated.

With the advent of the newer sulphonamide drugs, treatment of gonorrhea is, in most instances, a short-time affair. If the source of that infection is not also brought under treatment, however, little has been accomplished in control of the disease. Every physician who is treating gonorrhea should make an honest attempt to get in the sex partner for examination. With the short incubation period of gonorrhea, the infected case almost invariably knows the source.

This is not so true of syphilis unless it happens to be a primary lesion. When possible though the same procedure applies in the case of syphilis; treating one infected individual without taking care of his source or contacts will not control spread.

Clinic facilities for the care of the indigent venereal patient must be increased but the same emphasis must be placed in these clinics; namely, insist on regular, adequate treatment of the individual case and above all find the sources responsible for spread. Where prostitution is playing a part in the spread, local authorities have a definite responsibility in law enforcement.

No single group—physician, clinic, health department or law enforcement agency—can alone handle the venereal disease problem. Each has a place in the program if it is to be effective, and unless all work together maximum benefits will not be obtained. Physicians are accustomed to think in terms of the individual and his treatment but in the case of venereal diseases need to broaden their interests to the community problem.

The war demands the best in manpower that the country can offer and venereal disease cannot be allowed to interfere with the effectiveness of that effort.

BUREAU OF MATERNAL AND CHILD HEALTH

J. S. Hough, M. D., Acting Director

CHILD HEALTH DAY

MAY FIRST IS MAY DAY

Again the President has proclaimed the first day of May as Child Health Day.

The President's Proclamation says, in part: "I call upon the people in each of our communities to contribute to the conservation of child health and the reduction of illness among children by exerting every effort to the end that before May Day—Child Health Day—children over nine months of age be immunized against diphtheria and smallpox, the two diseases for which we have the surest means of prevention."

Dr. Martha Eliot, Associate Chief of the Children's Bureau, calls attention to the fact that the requirements of our armed forces will cause a shortage of doctors and nurses

in many communities. Fathers and mothers engaged in industries cannot be quarantined without loss to defense efforts.

During this same period, children should be immunized against typhoid fever.

Diphtheria toxoid and typhoid vaccine may be obtained from the State Department of Public Health.

Physicians in some communities may also advise immunization against whooping cough and tetanus. A combined diphtheria and tetanus vaccine is available from commercial laboratories.

We will call upon the county health officers to prepare immediately for and to promote this program.

The cooperation of other agencies and organizations interested in children should be secured. Parent-teacher associations, business men's clubs, the American Legion, women's clubs—all these can contribute in some manner in this effort. The Forty and Eight has adopted diphtheria immunization as a main objective.

"Everyone who helps in this fight is sharing in the effort to make our Nation strong."

BUREAU OF SANITATION

D. S. Abell, M. S. in S. E., Director

PUBLIC AND PRIVATE HOUSING IN DEFENSE AREAS

Claude P. Owens, C. E.

Associate Public Health Engineer

About January 1, 1941 news was passed out from Washington that a site had been selected near Childersburg, Talladega County, on which a powder plant would be constructed, and the DuPont Company had the contract to construct and operate the plant for five years. According to information collected from newspapers and from other areas where similar plants had been constructed, there would be approximately 25,000 people employed at the peak of construction.

On January 21, 1941 a conference was held in Montgomery, and present were representatives of the U. S. Public Health Service, the State Health Department, the Talladega County Health Department, the State Planning Board, and the DuPont Company. The purpose of the conference was to plan an

environmental sanitation program for the area that would be involved in the project.

On January 23, in the Talladega Daily Home, an article furnished by the Chamber of Commerce, Albany, Indiana, was published. The figures in this article were based on the number of people employed on a job similar to this one at Charles Town, Indiana. It stated that Talladega County should provide facilities to care for 1,000 trailers, rooms for 1,000 single men, and 1,000 small apartments.

On January 28 representatives of the State Health Department were in conference with a representative of the War Department at Birmingham to discuss the housing problem that would be created in this area. The representative of the Army stated that no provisions would be made by the Army or the DuPont Company to house the workmen. He also added that the plant would be constructed in a certain length of time and it might operate after having been constructed or it might be used as a standby plant. Since war has been declared, continuous operation will undoubtedly be required.

The Bureau of Sanitation, realizing something was needed in this and other areas to require adequate sanitation with particular reference to temporary housing for workmen, in February furnished the county health officers concerned with recommended regulations to be adopted by their county boards of health to regulate the construction of bunk houses, trailer camps, tourist camps and tent camps. Following the adoption of the regulations, enforcement was left to the county health departments.

In writing these regulations, the following three major things were considered:

1. The protection of the health of the people already living in and around these areas.
2. The protection of the health of the people migrating into these areas.
3. The realization of a reasonable return by private individuals on investments made.

Public health workers, realizing other regulations were needed to control trailer parking in municipalities, recommended that an ordinance to control trailer parking be adopted by those towns affected. Sylacauga was the first to adopt such an ordinance. Talladega, after making some improvements, adopted an ordinance similar

to Sylacauga's. The ordinance adopted by Talladega has been considered and adopted by other towns having the same problem. Under these local ordinances, enforcement is a responsibility of municipal authorities.

The location of a trailer or a tent at a private dwelling created a problem. As this person was not violating trailer camp or tent camp regulations adopted by the county board of health, some other law had to be applied.

The Attorney General was asked for a ruling as to what created a premise. His ruling was: "A house is an abiding place and abode or means of lodging."¹ From this ruling, the State Privy Law could be used by a county health officer to require proper sanitation for such trailers or tents.

In writing the recommended regulations other regulations were studied, such as the state hotel and tourist camp regulations, and some sections were rewritten and used in the proposed regulations. The TVA bunk house regulations and trailer camp regulations that had been used successfully by other states were studied and used.

After these regulations were written and adopted by the Talladega County Board of Health, the County Health Department did not have much time to put them into effect before the influx of people into this area became acute. It meant fast work and long hours for the personnel of the County Health Department. The peak of employment was not reached until about September or October, but the people in this area hunting employment needed housing as well as the persons employed. The number of people employed at Childersburg by the DuPont Company, not counting the number employed at Talladega constructing the bag loading plant, was as follows: June 1, approximately 4,000; July 1, approximately 12,000; September 1, approximately 18,000; October 1, approximately 23,000. Of this number, approximately 60 to 65 per cent commuted from adjoining counties and towns. The other thirty-five to forty per cent looked for housing in the vicinity of the area.

From experience, in these areas, it has been found that the trailer camp regulations are needed and used more than the tourist camp and bunk house regulations. A general outline of these is as follows:

1. 83 NW 717.

- I. Trailer Camps
1. One toilet for each sex for each twelve trailers. These could be water flush or standard pit privies.

2. One bath facility for each sex for every twelve trailers. These could be showers or tubs.

3. One hand-washing facility for each sex for every twelve trailers.

4. One laundry sink for the camp.

5. One night-waste container sink for the camp.

6. One hopper for emptying night-waste containers for the camp.

7. All trailers in the camp must be parked within 200 feet of these facilities.

8. The water supply (this applies to bunk-houses, tent camps, and tourist camps) must be from a public supply, or from a source approved by the State Health Department. Hot water under pressure must be piped to all facilities.

9. Toilets for men must be provided with urinals.

- II. Bunkhouse
- This could be a building with one large room or it might have several rooms. In most cases only men live in establishments of this type.

The bunk house regulations vary somewhat from the trailer or tourist camp regulations as only one sex is usually being housed.

1. One toilet for every fifteen people.

2. One hand-washing facility for every fifteen people.

3. One bath facility for every twenty people.

4. Five square feet of light area per person.

5. Three hundred cubic feet of air space per person.

6. Forty square feet of floor area per person.

7. Toilets for men must be provided with urinals.

- III. The facilities for tourist camps are similar to the trailer camps, except light, floor, and air space have to be considered.
- The disposal of waste from all facilities must be in a manner approved by the health department. This applies to all these regulations.

Upon adoption and subsequent enforcement of the regulations, it was found that a

score sheet was needed to make inspections and score each place. This sheet was prepared and an application and permit similar to the ones used for food-handling establishments were prepared and put in operation. The judge of probate was advised by the health officer of the permit system. He cooperated by not issuing any privilege license until a permit was issued by the county health officer.

From working in the Childersburg area and other defense areas over the state it appears that the regulations as outlined are minimum requirements.

These regulations are recommended for defense areas, and if they are adopted and properly enforced they will serve their purpose in protecting the public health of the people.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	Dec. 1941	Jan. 1942	Estimated Expectancy Jan. 1942
Typhoid	4	10	10
Typhus	46	37	18
Malaria	186	92	63
Smallpox	0	1	3
Measles	129	216	311
Scarlet fever	156	152	89
Whooping cough	55	56	129
Diphtheria	92	68	76
Influenza	291	1676	3120
Mumps	49	120	88
Poliomyelitis	20	5	3
Encephalitis	2	2	1
Chickenpox	107	220	307
Tetanus	2	0	3
Tuberculosis	167	283	191
Pellagra	29	8	12
Meningitis	3	9	10
Pneumonia	205	585	648
Syphilis	886	968	976
Chancroid	15	21	6
Gonorrhea	311	382	281
Ophthalmia neonatorum	0	2	1
Trachoma	0	0	0
Tularemia	0	1	2
Undulant fever	4	1	2
Dengue	0	0	0
Amebic dysentery	0	0	0
Cancer	151	244	0
Rabies—Human cases	1	0	0
Positive animal heads	12	14	—

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

“What is an annual report? Perhaps it might be wise for all concerned to think about this question before attempting to write an account of the past year’s activities. An annual report, we would say, is a statement which, with clarity and sincerity, interprets an organization’s program, its policies, its background, its plans, its financial position, and its potentialities so as to gain the sympathetic support of an informed public.”

Woman's Auxiliary

Mrs. F. C. Smith, Chairman
Press and Publicity Committee

It is the responsibility of the Auxiliary to get Hygeia into homes, schools and doctors' offices. Today, when there is so much need for nutrition for defense, valuable information can be obtained from Hygeia. A series of articles is being published now in the magazine.

Dr. W. W. Bauer, Director of the Bureau of Health Education of the American Medical Association, asks the Auxiliary to interest the working class of women in health and nutrition. These women—the professional women, clerks, salesladies, maids and waitresses—all have health interests. The articles in Hygeia will help to prepare excellent programs.

Mrs. E. N. Mendenhall, Chairman of the Program Committee, gives this suggestion: "Please be very alert in your study and observation of Nutrition for Defense. This can be a Roman holiday for faddists, cultist and line-run propagandists."

* * *

The Bulletin is the official organ of the Woman's Auxiliary. Through it all members, as well as officers, may obtain information about the splendid work being done in auxiliaries in other states. The spring number is just out and has many interesting articles. The convention program will be in the May issue.

* * *

The State President, Mrs. J. R. Horn, wishes all Auxiliaries to be preparing reports for the convention that will be held in Montgomery this year. Outlines of the program will be in the next Journal.

* * *

Haddon Hall will be the headquarters for the annual meeting of the Woman's Auxiliary to the American Medical Association, which will be held in Atlantic City, New Jersey, June 8-12, 1942.

Requests for reservations should be sent immediately to Haddon Hall, Atlantic City, New Jersey.

ANNUAL MEETING
MONTGOMERY
APRIL 21, 22, 23, 1942

Book Abstracts and Reviews

Anus, Rectum, Sigmoid Colon: Diagnosis and Treatment. By Henry Ellicott Bacon, B. S., M. D., F. A. C. S., F. A. P. S. Clinical Professor of Proctology, Temple University School of Medicine; Associate Professor of Proctology, Graduate School of Medicine, University of Pennsylvania; Visiting Proctologist, St. Luke's and Children's Hospital; Proctologist, National Stomach Hospital; Consultant Proctologist, Mercy Hospital; Consultant Proctologist, Paul Kimball Hospital, Lakewood, New Jersey; Co-Founded and Past President, Proctologic Society, Graduate Hospital, University of Pennsylvania; Lieutenant-Commander, M. C-V (Surgery), U. S. Naval Reserve. Introduction by W. Wayne Babcock. Foreword by J. P. Lockhart-Mummery. Cloth. Price, \$8.50. Pp. 857, with 507 illustrations. Philadelphia, Montreal, London: J. B. Lippincott Company. Second Edition, 1941.

Dr. Bacon has written an encyclopedic volume dealing with the diseases of the lower bowel and anus. In his attempt to include everything dealing with the subject, he has put into the volume many methods of operation and treatment which he himself does not approve. He has been so literal in quoting the works of other men that on a single page he calls the same chemical by three or four different names just as the terms were used by the original authors. This does seem to be carrying the point a little too far and is certainly confusing to the reader. There is a very excellent chapter on the injection treatment of hemorrhoids, and the description of malignant growths of the rectum and operative procedures for the treatment of rectal malignancy is particularly good and well illustrated, though there are no x-ray illustrations showing changes caused by these growths.

This second edition includes articles on the avoidance of postoperative pain, the calculation of dosage for lumbar analgesia, control of blood pressure during spinal anesthesia, the use of sulfanilamide in chronic ulcerative proctosigmoiditis and in the sequelae of lymphogranuloma venereum. Despite these efforts to bring this book up-to-date, there is not even the slightest mention of the use of sulfanilamide in the treatment of anal chancroid and gonorrheal proctitis.

C. K. W.

Arthritis in Modern Practice. By Otto Steinbrocker, B. S., M. D. Assistant Attending Physician and Chief, Arthritis Clinic, Bellevue Hospital, Fourth Medical Division, New York City. With Chapters on Painful Feet, Posture and Exercises, Splints and Supports, Manipulative Treatment and Operations and Surgical Procedures by John G. Kuhns, A. B., M. D., F. A. C. S. Chief of the Orthopedic and Surgical Service, Robert Breck Brigham Hospital; Assistant Visiting Orthopedic Surgeon, Boston Children's Hospital. Cloth. Price, \$8.00. Pp. 606, with 321 illustrations. Philadelphia and London: W. B. Saunders Company, 1941.

Having littered his shelves with books dealing with the subject of rheumatism and having failed to find one of them sufficiently practical to raise any enthusiasm on his part, the reviewer had almost come to the conclusion that no one knew enough about this subject to write a first-class book. Then he read Steinbrocker's book, reversed his opinion and felt willing to discard all other books he has on the subject. The reviewer, being one of that large group of physicians who are supposed to know something about every field of medicine and are honored with the title general practitioner, judges the quality of a book by one criterion—how well does this book succeed in

helping one relieve the pain and suffering of one's patients. Steinbrocker's book succeeds remarkably well and should arouse the enthusiasm of anyone who is willing to read it carefully. The author presents accepted methods of treatment and the newest developments in the field of arthritis, yet he wastes no time in quibbling over the various unsuccessful methods of treatment with which the literature is cluttered.

The chapter on rheumatoid arthritis is particularly clear and concise and conveys an attitude of hopefulness rather than the usual pessimistic one which the average physician has when he sees a patient with this disease. Of great practical value is the chapter on fibrositis, particularly the portion dealing with treatment by injection of local anesthetics. There are also excellent chapters on gout, specific arthritis, traumatic arthritis, bursitis and ganglion. The chapter dealing with the subject of pain around the shoulder joint and those covering the subjects of backache, sciatica and neuralgia contain information of practical value to every physician.

With sincere enthusiasm the reviewer commends this book to every physician who sees in his practice patients with rheumatism in any form and offers his congratulations to the author for having written a book which should prove a classic in medical literature. To the author he offers this tribute—the good that can come from the general application of the knowledge contained in this book should be a memorial to the man whose knowledge and logic have made possible the publication of this masterpiece.

C. K. W.

Microbes Which Help or Destroy Us. By Paul W. Allen, Ph.D., Professor of Bacteriology and Head of the Department, University of Tennessee; D. Frank Holtman, Ph.D., Associate Professor of Bacteriology, University of Tennessee; and Louise Allen McBee, M. S., Formerly Assistant in Bacteriology, University of Tennessee. Cloth. Price, \$3.50. Pp. 540, with 102 illustrations and 13 color plates. St. Louis: The C. V. Mosby Company, 1941.

In the preface the authors state that "this book is the product of the average layman's need of becoming microbe conscious." The title, however, is extremely misleading as in the 64 chapters of the text 6 are really historical, 5 are devoted to helpful microbes and 53 deal with disease producing organisms.

While simply written and easily understandable by the layman, much of the factual information simply consists of restatements culled from recognized textbooks. In many instances these sources might better be consulted for more authoritative statements on the subject.

Even in a casual reading of the text one notes the presence of numerous obvious errors, some of which may be noted: on page 70 belief in the streptococcus as the usual cause of childbed fever is attributed to McCollum (the biochemist) whereas McCallum (the pathologist) is surely intended; on page 203 it is stated that preventive methods (in connection with gonorrhea) are almost unheard of by the general public—a truly astonishing statement in view of the wide publicity given the venereal diseases the past few

years; on page 213 the control of the spread of typhoid fever by the examination of food handlers is advocated—a procedure long since generally abandoned as unprofitable; on page 224 it is said "the dysentery bacteria do not appear in the blood stream"—an assertion contradicted by experience in any public health laboratory; on page 253 it is remarked that diphtheria toxin-antitoxin began to be used in 1814 whereas the etiologic agent in the disease was not isolated by Loeffler until 1884; on page 273, in discussing the etiology of influenza, it is said, "it appears that the virus and bacillus (of Pfeiffer) may have to be present simultaneously in order for one to acquire the disease"—an opinion hardly warranted by our present information; on page 295 Negro bodies are declared characteristic of street virus rabies. Negri bodies are obviously referred to. On the same page Denison and Leach are said to have reported that in England rats do not play an important part in the transmission of rabies. The fact is that they reported on conditions in Birmingham, Alabama.

On the whole it is difficult to see where this book serves any useful purpose.

S. R. D.

Essentials of Nutrition. By Henry C. Sherman and Caroline Sherman Lanford. Cloth. Price, \$3.50. Pp. 418. New York: The Macmillan Company, 1941.

The fundamentals of human nutrition are presented in non-technical terms in this interesting and widely familiar textbook.

Most teachers of nutrition prefer the logical order in which the subject matter is presented, that is: (1) the energy aspects of nutrition, (2) the proteins and their amino acids, (3) the mineral elements and (4) the vitamins. If the instructor desires to do so, certain topics may be rearranged without the loss of sequence.

The chapters dealing with Food for Family Groups and How to Make Nutrition Knowledge more Effective, and the fact that the principles of nutrition are presented very simply and comprehensibly, should make this book indispensable for use in community nutrition centers where short concise courses are desirable.

The tabulations in the appendix include research results through February 1940, and are an invaluable feature of any text on the science of nutrition.

This book is recommended to students of nutrition, public health nurses and others interested in authoritative and scientific facts in the field of nutrition.

A. T.

"The printed materials produced by the National Tuberculosis Association each year for the Early Diagnosis Campaigns have always been outstanding examples of health publicity. The 1942 materials, however, surpass those issued in other years. The posters, leaflets, and manuals for the 1942 drive certainly reflect credit on the very able staff that planned them. All these publicity items are admirable from an educational point of view. Moreover, they are attractively executed."

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SIMPLICITY IN GYNECOLOGIC PRACTICE

By

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Birmingham, Alabama

"And a woman having an issue of blood twelve years, which had spent all her living upon physicians, neither could be healed of any,

Came behind Him, and touched the border of His garment: and immediately her issue of blood stanch'd."—Luke 8: 43-44.

This is an instance of the miraculous in gynecologic therapeutics which cannot be approached in these latter days, but we can do much in diagnosis and treatment with simple methods and instruments, often with spectacular if not almost miraculous results.

The history is all-important, and the sequence of events, with special reference to dates, seems vital toward a complete understanding of the patient's problem. I have been in the habit of giving my patients a small calendar which serves as a positive record of bleeding, pain and hormone medication. When the patient returns for a later interview, this record may be copied or appended to the history without more ado. The charting of bleeding as a sign or sequence has been advocated by many gynecologists, several of whom advise the inclusion of lined areas on the history sheet for this purpose.

I believe that every new gynecologic patient should have a serologic test and a determination of the red blood status. But, of all the laboratory procedures done by the medical profession, the hemoglobin variation is the widest. The accuracy of the pipette, the dilution, the variability of the scale, the factor of artificial light and the individual range of accurate color perception all lead to wide errors. An hematocrit or cell volume determination, more accurate and simpler than the hemoglobin reading, can be obtain-

ed at the time of the venipuncture, and if allowed to stand for one hour, the sedimentation rate as a guide in the diagnosis of malignancy and infection can be read.^{1, 2} When the tube is centrifuged or allowed to stand over night, the cell volume (volume of packed red cells) can be read off directly.

I believe that it is best to examine patients before they have voided. This is vital for a correct evaluation of incontinence, for example. The taking of urethral smears after micturition is valueless for the correct diagnosis of gonorrhoea and infection of Skene's glands. The consideration of a bladder or fascial defect in cystocele and/or descensus uteri should always be made before the patient voids and then, after this observation, the patient may void or be catheterized and a pelvic examination done.

The use of the stained vaginal smear is a most accurate diagnostic procedure when a fresh preparation of the vaginal fluid (undiluted) is fixed on a slide in equal parts of 95 per cent ethyl alcohol and ethyl ether and then stained with a polychrome stain (Papanicolaou)³ requiring about four minutes, or with a fuchsin stain (Salmon) requiring two minutes.⁴ The type of cellular response to the estrogens, the presence of *Tr. vaginalis* and monilia, and the presence of malignant cells or spermatozoa are permanently recorded. This procedure is best done with a small glass pipette and bulb as devised by

1. Mathieu, A, et al.: The Sedimentation Rate in Gynecology and Obstetrics, *Am. J. Obst. & Gynec.* 21: 197-204, Feb. '31.

2. Wintraub, M. M.: Hematological Technique, in Tice: Practice of Medicine, Hagerstown, Md., W. F. Prior Company.

3. Papanicolaou, G. N.: Some Improved Methods for Staining Vaginal Smears, *J. Lab. & Clin. Med.* 26: 1200-1205, Apr. '41.

4. Geist, S. H., and Salmon, U. J.: Evaluation of Human Vaginal Smears in Relationship to the Vaginal Mucosa, *Am. J. Obst. & Gynec.* 38: 392-399, Sept. '39.

Papanicolaou. A "clear slide," so-called, with large, flat, polygonal cells containing small piknotic nuclei evinces a maximum estrin effect, such as is noted at the time of ovulation.^{5, 6} A series of daily or frequently taken smears is desirable.

The variation in vaginal acidity or pH, coupled with variation in ovarian activity and hormone titre, was shown by Zuck⁷ and Bennett and Russell.⁸ Beilly⁹ has constructed a table of vaginal acidity which is scaled with vaginal smear appearance and which very nicely indicates certain degrees of estrogen level in patients who do not present vaginitis or cervicitis. Menopausal patients and castrates present alkaline vaginal secretion, and an increase in estrogen titre (as, for example after stilbestrol therapy) causes a shift in pH toward acidity. Optimum acidity (folliculin or estrin effect) is reached at pH 3.8 to 4.4. Simple test papers of nitrazine, a universal indicator, serve to record a wide range of pH by three color changes from pH 4 to 7. The practical application of this testing for acidity is the evaluation of the patient's response to estrogen therapy. The amount of medication necessary for the treatment of a menopausal patient can frequently be best decided upon by a consideration of the change from the alkaline toward the acid reaction of the vaginal fluid or by the observation of the change in the vaginal smear. The patient's history or reports may not be entirely reliable, for abnormal thyroid function or exaggeration may mask the response to therapy. I am loathe to believe, for example, that the average menopausal patient has as many hot flushes as she reports (unless she has recorded them). Overdosage, by attention to the patient's story

alone,¹⁰ is frequent and is an expensive and haphazard method of hormone dosage. Vaginal pH determinations and inspection of vaginal smears is an excellent objective control of therapy.^{10, 11}

The microscopic examination of the cervical mucus is most important and from this procedure was evolved the Huhner test or visualization of motile and non-motile spermatozoa within the cervical canal. Spermigration, or the penetration of the mucous plug in the cervix by active male cells, is most successful when there is a clear, non-viscid mucus present. Pus cells and the presence of acid mucus—both evidence of endocervicitis—will impede spermigration, and this is one of the very frequent causes of infertility in the female.¹² A small blunt pipette may be used to aspirate a small amount of mucus for transfer to a slide for visualization under the microscope and testing.

The cervix should always be traversed by a small probe or uterine sound in a complete gynecologic examination, unless pregnancy is suspected. Bleeding after this procedure—done under the usual aseptic precautions—will often bring to light an endocervical carcinoma or polyp within the canal and out of sight. The uterine depth may at the same time be determined (?-infantile uterus), and the presence of congenital anomalies is frequently discovered by this means. It has been said by Cary and others interested in sterility problems that the passage of a sound shortly before ovulation and coitus will facilitate conception. It may be the dilating effect, but I have personally seen two such instances of pregnancy following this simple procedure.

Rubin's test or tubal insufflation has until recently been considered a hospital procedure. The apparatus with the manometer, gas cylinder and kymograph is very expensive. All we wish to know is whether gas, or if little is used, air, passes through one or

5. Papanicolaou, G. N.: The Sexual Cycle in the Human Female as Revealed by Vaginal Smears, *Am. J. Anat. (Supplement)* 52: 519, '33.

6. Papanicolaou, G. N., and Traut, H. F.: Diagnostic Value of Vaginal Smears in Carcinoma of the Uterus, *Am. J. Obst. & Gynec.* 42: 193, Jan. '41.

7. Zuck, T. T.: The Time of Ovulation in Human Female as Determined by Measurement of Hydrogen-Ion Concentration of Vaginal Secretion, *Am. J. Obst. & Gynec.* 38: 310-313, Aug. '39.

8. Bennett, M. J., and Russell, P. B., Jr.: Vaginal Smears Correlated to Ovarian Function (Four and One-Half Months Through Puberty), *South. Surgeon* 10: 79-87, Feb. '41.

9. Beilly, J. S.: Determination of Hydrogen-Ion Concentration of Vaginal Secretion as an Index of Ovarian Activity in Hypo-Ovarian States, *Endocrinology* 26: 959-964, June '40.

10. Papanicolaou, G. N., and Shorr, E.: The Action of Ovarian Follicular Hormone in the Menopause as Indicated by Vaginal Smears, *Am. J. Obst. & Gynec.* 31: 806-831, May '36.

11. Papanicolaou, G. N., and Shorr, E.: The Action of Ovarian Follicular Hormone in Ovarian Insufficiency in Women, *Proc. Soc. Exper. Biol. & Med.* 32: 585, Jan. '35.

12. Cary, W. H.: Duration of Sperm Cell Migration in Uterine Secretions, *J. A. M. A.* 106: 2221, June 27, '36.

both tubes. Cary¹³ and Jacoby¹⁴ have each devised a cheap, simple cannula which, when connected with a bulb and a manometer, records the pressure necessary to force gas through the tubes. A stethoscope over the abdomen will detect the escape of gas from the fimbriae, and the release of pressure will be perceived concomitantly by the fingers holding the rubber bulb. Colvin¹⁵ has recently improved this apparatus with the introduction of a threaded cannula which, when engaged in the cervical canal, prevents the escape of gas into the vagina.

The date of ovulation, the optimum time for conception, is most difficult to ascertain; and most often this date in the mid-interval remains a guess, even to the experienced gynecologist. Recent researches by Rubenstein^{16, 17} indicate that a regularly ovulating woman presents variations in the basal body (rectal) temperature which is taken before arising each morning. The patient can take her own temperature and record it. When these data are charted by the physician, wide swings become apparent, the low point in the curve each month being reached just before ovulation when conception is most likely. A temperature rise continues after ovulation and should exceed 0.5° F. in the first 24 hours, and 1.0° F. the first week. As soon as the corpus luteum has regressed—a few days postmenstrually—new follicles begin to develop and an increase in estrogen production begins anew. The temperature depressing effect of estrin is again apparent and the basal body temperature swings lower, to fall abruptly again at the time of ovulation. If pregnancy ensues, there will be a persistence of the elevation of temperature from conception on.

The endometrial biopsy is a simple procedure which is of the greatest importance.

13. Cary, W. H.: Sterility Studies: Diagnosing of Obscure Cases, M. J. and Rec. July 3, '29, and Becton Dickinson Co.

14. Jacoby, A.: Improved Instrument for Tubal Insufflation, Salpingography and Aerouterography, Am. J. Obst. & Gynec. 39: 156, Jan. '40.

15. Colvin, E. D.: New Types of Cervical Applicators for Tubal Insufflation and Uterosalingography, Am. J. Obst. & Gynec. 37: 168-169, Jan. '39.

16. Rubenstein, B. B.: Fertile Period in Women, J. Contraception 2: 171-173, Oct. '37.

17. Rubenstein, B. B.: Estimation of Ovarian Activity by the Consecutive Day Study of Basal Body Temperature and Basal Metabolic Rate, Endocrinology 22: 41-44, Jan. '38.

The use of the Novak¹⁸ suction curette, the Randall¹⁹ or the Burch²⁰ biopsy curette yields a small bit of tissue which, when fixed and stained for microscopic examination, will allow a conclusion as to the occurrence of ovulation and the formation of a corpus luteum. Endometrial hyperplasia, dysplasia or aplasia may also be discovered. The studies of Douglas²¹ have proven beyond peradventure that this procedure is safe, efficient, relatively painless and even therapeutic when a generous amount of tissue is obtained. The procedure was never designed to remove retained products of conception or polyps, or to curette thoroughly the uterine cavity. These should be done under hospital conditions.

It is important to ascertain carefully the time in the interval when the endometrial biopsy is to be done. For an evaluation of the maximum progestin effect, the first day of menstruation is best, for thus the interruption of an early pregnancy is avoided and a liberal amount of tissue is obtained.

Cervical anesthesia can also be a simple procedure and I have used a crystal of cocaine in the cervical canal preparatory to biopsy, curettage or slight cervical dilatation, with almost complete relief of pain. The injection of 10-20 cubic centimeters of a one per cent procaine solution lateral to the cervix will also serve well. This type of injection, but deeper and into the broad ligament, has been employed in the treatment of certain types of dysmenorrhea with encouraging results.

The treatment of cervicitis with strong caustics, such as 20-50 per cent silver nitrate, has been proven actually harmful. Naturally a gaping, so-called "duck-bill," cervix will require trachelorrhaphy or cervical amputation. But a postpartum cervicitis and that frequently associated with sterility are cured by diligence and perseverance with mild caustics. I have had considerable success with dry, raw gauze as a swab for the cervical canal, expressing mucus from the

18. Novak, E.: Suction Curet Apparatus for Endometrial Biopsy, J. A. M. A. 104: 1497, Apr. 27, '35.

19. Randall, L. M.: Endometrial Biopsy, Proc. Staff Meet. Mayo Clin. 10: 143-144, '35.

20. Klingler, H., and Burch, J.: Suction in Obtaining Endometrial Biopsies, J. A. M. A. 99: 559-560, 1932.

21. Douglas, G. F.: Study of 107 Cases of Uterine Bleeding with Endometrial Biopsies, Am. J. Obst. & Gynec. 42: 629, Apr. '41.

glandular depths. The use of 1-5 per cent silver nitrate solution following this procedure will do much toward relief of the condition. Plain powdered sugar, glycerine or ichthyol on tampon insertions are also helpful adjuncts, depending upon their hygroscopic properties for relief of the cervicitis. I should like to call attention to two new preparations which already have been of excellent service to the gynecologist. They are negatan and ozonized olive oil. Negatan is a colloidal metacresol-formaldehyde preparation which is an excellent styptic, and more effective than acetone; for example, in coagulation of bleeding points as in carcinoma of the cervix. It is cheap and very effective in the treatment of cervicitis and *Tr. vaginalis vaginitis*.^{22, 27} The ozonized oil combines a medicament with an emollient and can be used by the patient herself upon direction by her physician by the insertion of a vaginal capsule of the medication.²³ Carbon dioxide snow²⁴ has also been recently used for cervicitis with success. Light coagulation with the high frequency current does well. But, no matter what agent is used, I believe we should always remember that cervical mucus is essential for the preservation of function and the maintenance of vaginal acidity and flora, the destruction or alteration of which will serve to torment the patient incessantly. This is exemplified in certain individuals after vaginal hysterectomy in that vaginitis and dyspareunia are most troublesome.

I should like to recall the much-neglected knee-chest position for ease in treatment. When the patient is in the knee-chest position, the rugae of the vagina are obliterated by the ballooning effect of the air. Powder insufflation and topical application are therefore much more effective. The patient can be maintained and well controlled, and vaginal inspection of children, as with a Kelly endoscope, is much more satisfactory than with the patient in the dorsal recumbent position. Uterine replacement is also

simplified and the insertion of a pessary is less painful when the patient is in the knee-chest position. Tight packing of the vagina, preparatory to replacement of the uterus, is easy. My experience is that it is always worthwhile to insert a pessary even though the uterus will not be completely replaced anteriorly, for with douches, exercises and the maintenance of position, the fundus will most often be found anterior at the next visit. It should be recalled that a Smith-Hodge pessary inserted upside-down will, by pressure beneath the urethra, frequently control incontinence of urine temporarily.

The treatment of pruritus is now a simplified procedure and can be successful today with a minimum of investigation. A urine sugar should always be done first, to rule out diabetes. A hanging-drop or stained vaginal smear should be obtained for *Tr. vaginalis* or monilia. If the latter is suspected but not found, the swab should be kept in a few cubic centimeters of normal saline solution and examined the following morning. Beautiful budded or branched forms will frequently be seen at this time under the microscope and the diagnosis will be made.²⁵ Gentian violet (1-2% aqueous solution) is specific for monilia, and silver picrate, carbarsone or aldarsones suppositories or tablets will cure *Tr. vaginalis vaginitis*. A perineal or vulval scraping should be done in an effort to discover the trichophyton, and if the latter is found, a 10 per cent aqueous solution of sodium thiosulphate will clear up the condition with amazing rapidity. Trichophytosis, if crural or pudendal, will yield to the newer camphor-phenol application first suggested by Francis.²⁶ The preparation must be kept away from mucous surfaces, however. The patient's age and menstrual record will often suggest the presence of a menopausal or atrophic vulvovaginitis and this causes marked pruritus. Inasmuch as the estrogens are specific in this condition, vaginal suppositories or ointments containing estrogens yield prompt cures in 10-14 days.²⁷ Additional medication will be necessary, naturally, to continue the relief of

22. Filler, W.; Adamo, F. H., and Drezner, N.: Treatment of Cervicitis and Trichomonas Vaginalis Vaginitis with Negatol, Preliminary report, in press.

23. Barrows, D. N.: Treatment of Leukorrhoea with Ozonized Olive Oil, N. Y. State J. Med. 41: 118-121, Jan. 15, '41.

24. Weitzner, J.: Treatment of Endocervicitis with Carbon Dioxid Snow (Dry Ice) Am. J. Surg. 48: 620, June '40.

25. Greenblatt, R. B.: Personal communication.

26. Francis, E.: Phenol-Camphor for Athlete's Foot, J. A. M. A. 117: Dec. 6, '41.

27. Wharton, L.: Treatment of Pruritus of the Perineum, Labia and Vagina by Newer Methods, Including Injection of Alcohol and the Use of Stilbestrol and Astringent Cresol Derivative (Negatan), South. M. J. 34: 694-698, July '41.

unpleasant symptoms. An occasional case of pruritus, due presumably to a deficiency of vitamin B, has been cured by the administration of nicotinic acid, as described by Dabney²⁸ and also by Hesseltine.²⁹ Other patients suffering from pruritus of unknown origin will best be treated by alcohol injection of the perineum. With this technique, one minim of 95 per cent ethyl alcohol is injected intradermally at points about the vulva and anus, and relief of pruritus persists, together with some anesthesia, for as long as 11 months.^{30, 27} This technique can often be enhanced by first doing a perineal and pudendal anesthetic block with local anesthesia thus eliminating hospitalization and an inhalation anesthetic.³¹ This prevents pain from multiple injections during treatment. I have found antipruritic ointments and lotions particularly disappointing.

Probably no gynecologic symptom is more discouraging for the patient and for the physician than intractable pelvic and back pain due to the extension of cervical and pelvic carcinoma. Narcotics do little good and cobra venom is expensive and causes reactions. When carcinomatosis is so advanced as to involve the sacral nerves, an intrathecal injection of one cubic centimeter of absolute alcohol will completely relieve the pain on the side of injection for as long as three weeks.³² There is a concomitant anesthesia of the perineum and suprapubic region but this is not objectionable usually. An occasional urinary or rectal incontinence may develop but this is generally very brief.

For such an injection, the patient is placed on the side opposite that to be treated. With the hips elevated slightly and the patient resting somewhat forward, one cubic centimeter of absolute alcohol is slowly injected into the spinal canal following the aspiration

and disposal of one cubic centimeter of spinal fluid. She is kept in position for about 10 minutes and is then allowed to rest flat upon her back. By this time, anesthesia, caused by the effect of the alcohol on the posterior nerve roots, will have become effective.

It is not my purpose to digress into a thorough discussion of functional menorrhagia and metrorrhagia, but I do wish to cover an outline which has served me well. I believe every such patient should have the benefit of a BMR and a curettage. If the curettage is a thorough-going procedure, about 30 per cent of the patients will be relieved by this alone. These individuals will be found to have an endometrial hyperplasia, polyp, endometrial dysplasia or retained products of conception. If the patient is found to require substitution or addition hormone therapy after study of the endometrial specimen, progesterone, or more rarely estrogen, therapy can be started. Testosterone has been used effectually—especially in pellet implantation—but unless small doses are used (less than 300 mgm. per month) masculinization effects will be produced. APL hormones are less satisfactory. Thyroid medication, even when used empirically when the BMR is within normal range, often does considerable good.³³

I should like to mention an almost forgotten and frequently spectacular medicament which will often control vaginal bleeding of the menorrhagic type. That is moccasin venom. A course of graded daily injections of 0.5-2.0 cubic centimeters of the 1:2000 solution intramuscularly will often stop or control bleeding, especially in the woman experiencing menorrhagia at the time of the menopause.^{34, 35} Naturally, a curettage should always be done to rule out malignancy, etc. The cause of the cessation of bleeding in these cases is still obscure.

If all things fail temporary or even complete cessation of bleeding can be achieved by massive doses of estrogens (250,000 IU), or by testosterone (200-300 mgm.) or by the intramuscular injection, once or twice re-

28. Dabney, M. Y.: Use of Nicotinic Acid in Idiopathic Pruritus Vulvae, *South. Surgeon* 8: 232-239, June '39.

29. Hesseltine, H. C.: Vitamin Therapy in Vulvar Dermatoses, *Am. J. Obst. & Gynec.* 42: 702, Oct. '41.

30. Jacoby, A.: Treatment of Pruritus Vulvae with Subcutaneous Alcohol Injection, *Am. J. Obst. & Gynec.* 29: 604, Apr. '35.

31. Griffin, E. L., and Benson, R. C.: Gynecologic Surgery Under Local Anesthesia, *Am. J. Obst. & Gynec.* 42: 862, Nov. '41.

32. Greenhill, J. P., and Schmitz, H. E.: Intraspinal (Subarachnoid) Injection of Alcohol for Pain Associated with Malignant Conditions of the Female Genitalia, *J. A. M. A.* 105: 406, Aug. 10, '35.

33. Greenblatt, R. B.: *Office Endocrinology*, University of Georgia Publication, Augusta, Walton Press.

34. Burch, J. C.: *The Menstrual Problem*, *South. M. J.* 31: 80-83, Jan. '38.

35. Goldberger, M. A., and Peck, S. M.: Treatment of Uterine Bleeding with Snake Venom, *Am. J. Obst. & Gynec.* 33: 469-472, Mar. '37.

peated, of 15-20 cubic centimeters of blood from a lactating, amenorrheic woman.³⁶ This should be a temporary emergency procedure, serving to carry the patient over a period of anemia and debilitation, with a curetage planned in the several days following.

These features of diagnosis and treatment have been mentioned as some of the more recent advances in gynecology; and they are practical because of their simplicity.

HOOKWORM DISEASE CONTROL METHODS IN GEORGIA*

By

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The studies of Keller, Leathers and their associates¹ clearly show a marked reduction in the recent incidence and, presumably, in the intensity of hookworm infection in the Southern States in contrast to the conditions prevailing in 1910-14 as revealed by the Rockefeller Sanitary Commission. Nevertheless, hookworm disease remains a source of physical disability and economic handicap in certain parts of several states, and considerable amounts of time and money are currently expended by state and local health agencies in its reduction.

Curiously enough, however, the worldwide researches of the last twenty years on the quantitative aspects of hookworm infection have apparently failed to make an effective impact on state and local health authorities. Indeed, the problem is viewed by them almost without exception as a qualitative one. It is taken for granted that hookworm *infection* is tantamount to hookworm *disease*. Egg-positive school children discovered by annual flotation surveys are given, or are urged to take, anthelmintic treatment with little regard to their clinical condition, the relative magnitude of their worm burdens, or the probability of prompt rein-

fection. The only truly preventive values incidental to these efforts are when the survey information is used in the promotion of sanitary excreta-disposal facilities at home and schools. Thus, these anti-hookworm programs involve the special interests and activities of laboratory, epidemiologic, engineering, nursing and local health administrative services, but these frequently are not coordinated because the program lacks a guiding plan or specific direction. Much of the work, therefore, is repetitious, unnecessary and wasteful.

In an attempt to develop a sound anti-hookworm program that could be effectively and conveniently carried on by local health agencies and to assist in its promotion and effectuation in Georgia, the State Department of Public Health established a Hookworm Service unit late in 1939. Personnel includes a nurse and sanitarian, who give their entire time to this project, and a medical epidemiologist and a director (parasitologist) who devote about half their efforts to anti-hookworm activities.

The first step towards a refinement of existing knowledge of the hookworm problem in Georgia consisted of tabulating, by year and county, the previous ten years' incidence of hookworm infection as determined by flotation surveys. The county rates for this period were then used in developing an isorrobic map (Fig. 1) showing the statewide distribution of various classes of hookworm incidence. This provided a useful though not statistically or parasitologically ideal basis on which to plan subsequent investigations.

The next step was to substitute, in the minds of local health personnel, quantitative for qualitative concepts regarding hookworm infection. This was done by keynoting the subject at state and regional health meetings and by making it the topic of discussion before in-service training groups. The following argument was developed:

1. Adult hookworms suck blood continuously. The amount removed is proportional to the number of hookworms present!

2. If they remove blood more rapidly than it can be formed, hookworm disease (anemia) results; if not, the condition is one of subclinical hookworm infection.

3. The primary objective of public health authorities should be the detection, prevention and control of hookworm disease rather

36. Greenblatt, R. B., and Torpin, R.: Menometrorrhagia: New Method of Treatment, J. M. A. Georgia 28: 342-343, Aug. '39.

*Presented before the 1942 session of the Public Health Workers of Alabama in Montgomery, February 9, 1942.

†Director, Division of Malaria and Hookworm Service, Georgia Department of Public Health.

1. Keller, Alvin E.; Leathers, W. S., and Densen, Paul M.: The results of recent studies of hookworm in eight southern states, Am. J. Trop. Med. 20: 493-509 (July) 1940.

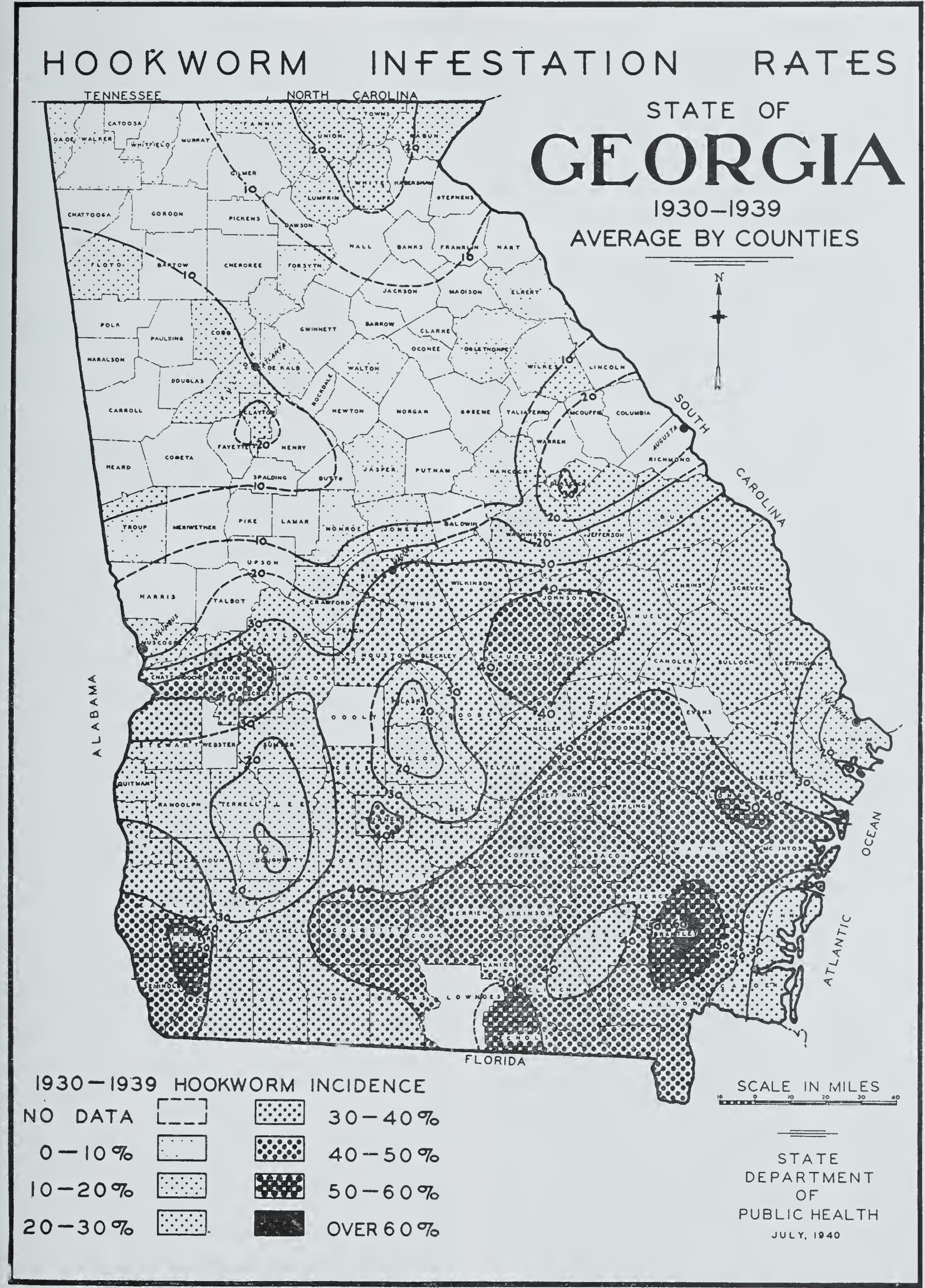


FIG. 1

than the elimination of subclinical hookworm infection.

4. Inasmuch as the rate of blood removal by hookworms varies directly with the number present and the rate of hemoglobin formation is normally governed by iron and protein intake, it follows that

- a. Hookworm disease is more likely to occur and will be more severe when worm burdens are high and iron-protein consumption low.
- b. When adequate iron-protein consumption prevails, hookworm infection, with rare exceptions, will be subclinical whether worm burdens are heavy or light.
- c. When diets are iron-protein deficient, a chronic, progressive anemia will develop irrespective of the presence or absence of hookworms.

5. Therefore, even in hookworm-infested areas, all instances of anemia are not necessarily cases of hookworm disease. Intelligently planned hookworm-disease control must distinguish between anemias caused or augmented by hookworms and those due to other causes.

6. To accomplish the control of hookworm disease, knowledge of the intensity as well as the incidence of hookworm infection must be considered in relation to the non-hookworm anemias of the people concerned.

The third step was the development of a practical program of investigation and control based on this quantitative viewpoint and available epidemiologic knowledge. It was aimed (1) at the destruction of the greatest possible number of hookworms with the least expenditure of time, travel, and materials, (2) the prompt physical rehabilitation of those sick with hookworm disease, and (3) the prevention of further hookworm infection.

The epidemiologic facts utilized, and their implications, are as follows:

1. Hookworm disease does not occur where approved domestic and school excreta-disposal facilities are in use; thus sanitary sewered or privied sections generally may be dismissed from consideration.

2. Assuming favorable temperature and moisture conditions, hookworm larvae develop best in sandy or sandy-loam soil; therefore, strictly clay regions should not be included in the area of examination.

3. Hookworm disease in this country is rarely, if ever, a health problem in Negroes;

thus Negroes may be omitted from investigation.

4. Hookworm disease is predominantly a disease of low-income families; therefore, it is rarely necessary to investigate well-to-do families.

5. Modern research has focussed attention on the family or household group rather than the individual as the important unit of hookworm dissemination in this country; therefore, hookworm investigation and control should be prosecuted on a family instead of an individual basis.

6. The average individual worm burden tends to increase with the number of infected members in the family; therefore, hookworm disease should be sought for in large rather than small families.

Summarizing the above, it is apparent that if investigation is restricted to large, white, low-income families living on sandy or sandy-loam soil without sanitary excreta-disposal facilities and in which clinical anemia is evident that the majority of the cases of hookworm disease in the area will be encountered.

In apprehending these families, two procedures are in use in Georgia. Where soils, family incomes, races and domestic sanitation vary widely within a county, direct home visiting without preliminary survey is planned on the basis of soil maps, sanitary survey maps, and information obtained from welfare agents, county agents, Farm Security representatives, home demonstration agents, physicians and others whose business takes them into rural homes. Fecal specimens from one or more anemic members, under 20 years of age, of each family are sent to the State Health Department Laboratory and these are examined by brine flotation. Those found positive are egg-counted by the small-drop dilution method of Stoll and Hausheer² to obtain some indication of the relative intensity of infection and the corresponding probability that the anemia observed is due to hookworms.

In counties where sandy soils, poverty and insanitation predominate, home visiting is deferred until selective school survey has directed attention to families of probable hookworm significance. This is done by dis-

2. Stoll, N. R., and Hausheer, W. C.: Concerning two options in dilution egg-counting: small drop and displacement, *Am. J. Hyg. (supp.)* 6: 134-145 (March) 1926.

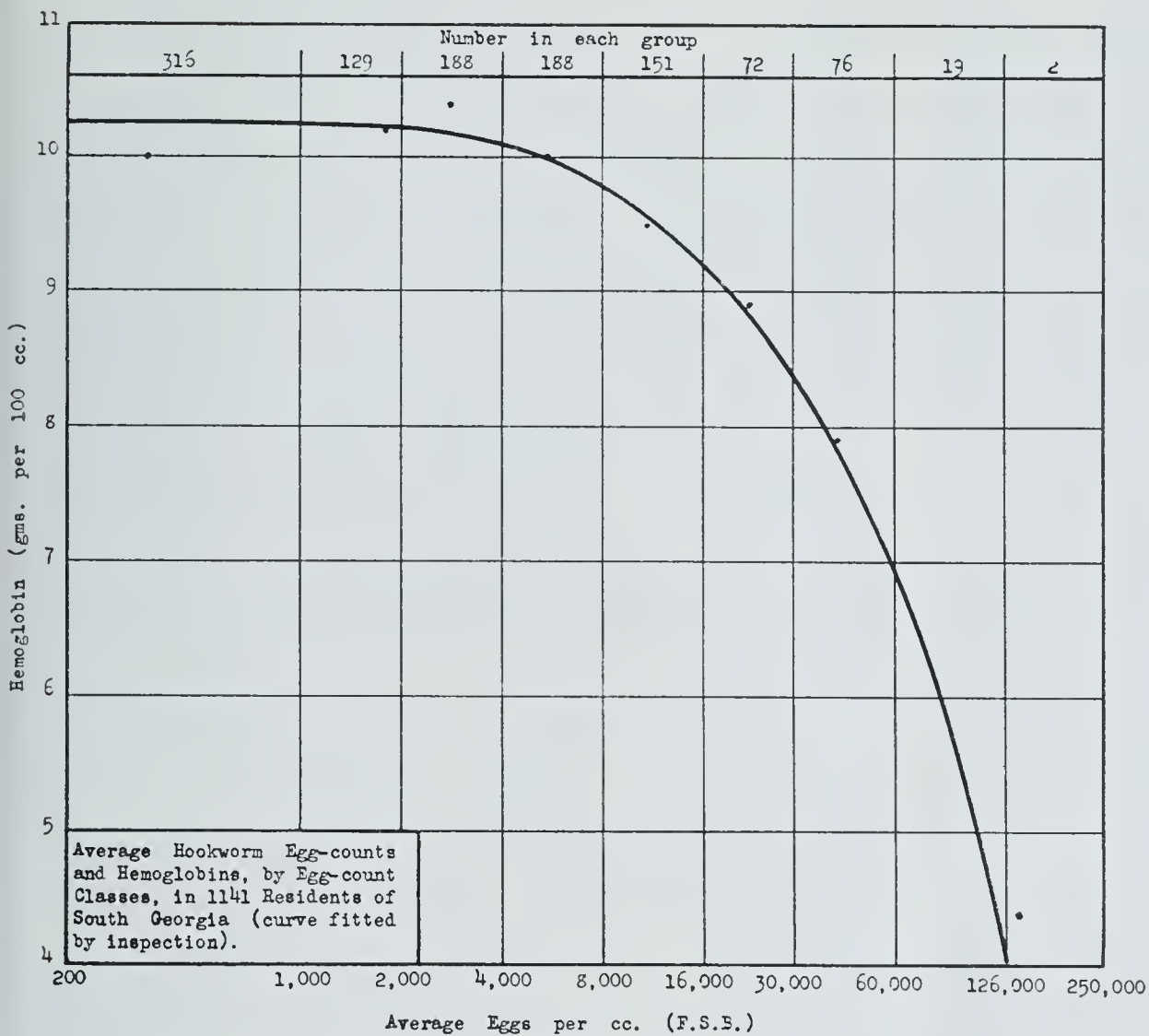


FIG. 2

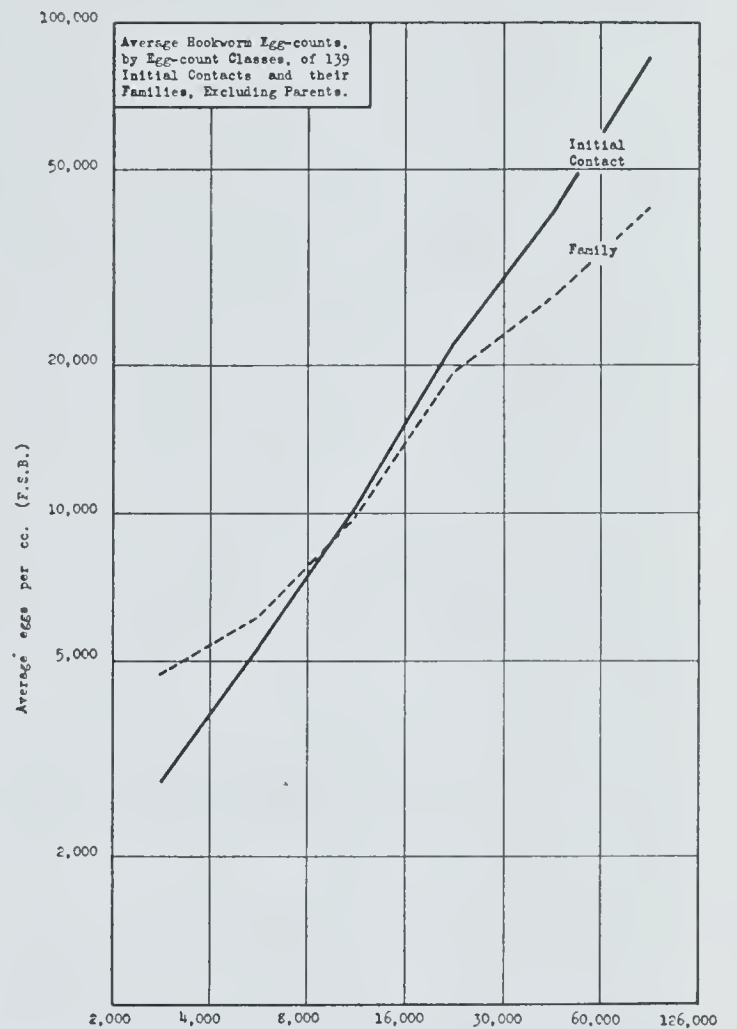


FIG. 3

tributing fecal containers only to those white school children who show evidence of being anemic. School teachers are invited to assist in the selection because they are able to make their judgments on the basis of activity as well as appearance and because it gives them definite responsibility in connection with this special health program. These specimens are examined in the State Health Department Laboratories first by flotation to eliminate negatives, the positives being egg-counted.

During the developmental stages of this program, we urged examination of all members of the suspected families. This turned out to be impractical because of non-cooperation, especially of adult males, and the time and travel consumed in repeated visits to the home. This procedure has been abandoned as we presently discovered that in general the egg count of the initial contact, i.e., the first anemic member of the family seen, under 20 years of age, was roughly representative of the average intensity of infection of all positive members of the family under 20 years of age in which age group most cases of hookworm disease occur in this state. A comparison of average egg counts of initial contacts and all members of the families is shown for 139 families in the accompanying graph. Accordingly, we have

discontinued routine examinations of other members of the family at great saving for both laboratory and local health services.

Similarly, we at first recommended control follow-up of families of anemic individuals with counts of 2000 or more eggs per cubic centimeter of formed stool. This level was selected, more or less arbitrarily, before the results of our own county-wide surveys became available. It allowed a reasonable margin of safety below the egg-count level (2600 eggs per cc.) at which Smillie and Augustine³ noted minimal symptoms of hookworm disease in Alabama. Our own observations,⁴ shown in Fig. 2, on the relation between egg counts and hemoglobin determinations (Sahli) convinced us that it was pointless in Georgia to attempt control in families where the average egg-count was much below 6000 eggs per cubic centimeter. This corresponds in Fig. 3 to an average egg count of 5000 eggs per cubic centimeter in

3. Smillie, W. G., and Augustine, D. L.: Hookworm infestation. The effect of varying intensities on the physical condition of school children. *Am. J. Dis. Child.* 31: 151-168 (Feb.) 1926.

Augustine, D. L., and Smillie, W. G.: The relation of the type of soils of Alabama to the distribution of hookworm disease, *Am. J. Hyg.* 6: 36-62 (supp.) (March) 1926.

4. Hill, A. W., and Andrews, Justin: The relation of hookworm burden to physical status in Georgia. In press.

initial contacts. Accordingly, local health personnel are now advised to select for control follow-up, families of anemic individuals under 20 years of age whose egg counts are 5000 or more eggs per cubic centimeter.

The families selected by either of these methods do not, of course, include all the cases of hookworm disease in the area. If faithfully carried out, however, these procedures, with a minimum expenditure of time, travel and materials, will direct attention to the bulk of the true hookworm morbidity, excluding that much larger group with hookworms but no hookworm disease. Attempts to eliminate hookworm from the latter group serve no useful health purpose, with the possible exception of promotion, a purpose which should be served better by an actual rather than a fictitious health problem.

Nevertheless, knowledge of these families, members of which are suffering from anemia not due to hookworms, is of health significance as it is generally found that these persons are undernourished with respect to iron. Dietary anemia in Georgia, and apparently in Florida as well,⁵ is more prevalent than hookworm disease with which it frequently and perhaps always occurs. This health problem can be economically attacked along with hookworm-disease control; indeed, the two health activities effectively complement each other.

What is to be done for these hookworm-diseased families once they are identified? First of all, their sick members must be made well. This requires medical service and, as far as possible, is handled by private physicians in Georgia. Indigency is high, however, among hookworm sufferers and it is usually the expressed desire of local medical groups or practitioners that health doctors assume treatment responsibilities for such patients. Anthelmintic drugs are supplied gratis to medical men by the state.

The therapeutic problem is a dual one consisting of worm removal and treatment of the anemia. As Payne and Payne⁶ have recently shown, hemoglobin recovery following worm expulsion without iron therapy is

a long drawn-out process. This is especially true when dietaries are iron deficient.⁴ On the other hand, while iron administration alone produces rapid improvement in the blood picture, the gains are not sustained unless the worms are removed. So we do both, giving iron, usually as Bland's pills, before deworming if the anemia is exceptionally severe, i.e., 5 gms. or less; after worm removal if the anemia is moderate. Educational efforts are made, thereafter, to improve the dietary so that greater iron intake in food is provided especially for growing children in which the concurrence of hookworm anemia and nutritional anemia is most marked.

The prevention of hookworm disease is, first of all, a matter of sanitation, i.e., the provision of approved excreta-disposal facilities; secondly, education concerning their use and the physical benefits that will result therefrom and, probably, of improved dietary as well if the dog-hookworm immunity hypothesis of Cort and Otto⁷ is verified in man.

We, therefore, vigorously promote the sale and use of sanitary sewage-disposal structures in homes and schools but in these days of progressively restricted WPA participation in community sanitation projects, of increasing cost and decreasing availability of materials and of labor, the prospects of seriously interfering with the transmission of hookworm by the use of standard sanitary units are comparatively remote. Families that cannot afford minimal medical service cannot afford pit privies.

In those numerous instances, therefore, in which home sanitation cannot be provided, we are trying to develop definitely preventive values from anthelmintic treatment. As indicated above, individuals suffering from hookworm anemia are treated with iron and tetrachlorethylene as fast as they are discovered irrespective of whether or not the premises are to be sanitized. The deworming of other members of the family at that time is not encouraged. If a pit privy is provided and used, there will be no material increase in the intensity of infection and so family treatment is not necessary. If, however, the household must get along without sanitary facilities, at least one and desirably two worm-removal treatments are

7. Cort, W. W., and Otto, G. F.: Immunity in hookworm disease, *Rev. Gastroenterol.* 7: 2-14 (Jan.-Feb.) 1940.

5. Abbott, O. D., and Ahmann, C. F.: Nutritional anemia and its prevention, *Bull.* 328 (November) 1938, *Agri. Exp. Sta.*, Gainesville, Fla.

6. Payne, G. C., and Payne, Florence K.: Relative effectiveness of iron and anthelmintics in the treatment of hookworm anemia, *Am. J. Hyg.* Sec. D, 125-132 (November) 1940.

urged for all members of the family during the cold winter months of the year. The object here is to reduce—and, if possible, to eliminate—the family worm burden at a time when immediate reinfection of its members is less likely than it is during the summer months. The unfavorable effect on non-parasitic stages of hookworms of temperature below 50° F. has been noted by various observers. Augustine,⁸ working in southern Alabama, was unable to find larvae in polluted soil from the latter part of December into March. Our own findings in south Georgia, incomplete and inconclusive, confirm this observation. Thus it appears that the soil in this area tends to become free from infective larvae during the winter months and the likelihood of reinfection following treatment at this season is correspondingly remote. This seasonal prophylactic effect is enhanced by the fact that it is during the cold months of the year that rural residents wear shoes if they ever wear them at all.

Two treatments with tetrachlorethylene completely remove hookworms from about 90 per cent of our patients and reduce the group egg-output by 99 per cent.⁹ If these are given during the winter to all members of families in which hookworm disease has occurred, it seems unlikely that in those families hookworm infection could build itself up to clinical intensities within several years.

Throughout the whole process of hookworm-disease control must run the thread of health education. Sanitary pit privy installation will accomplish nothing if the structures are not used. Treatment is at best a temporary expedient if it cannot be developed on a preventive basis. The exhortation to eat more diversified foods is futile if people are not shown how to provide and prepare these foods. In the school and in the home scientific facts about the nature and control of hookworm disease must be presented and explained. These facts must be used to create favorable attitudes which will insure cooperation in a program of

hookworm-disease reduction. Understanding and favorable attitudes will lead to the formation of hygienic practices which prevent reinfestation.

This program has not yet experienced the test of time. It is subject to improvement as further field investigations suggest. Nevertheless, we feel that through it we are accomplishing more hookworm-disease control at a lower cost than we did before its development.

THE FOOD FACTOR IN WINNING THE WAR*

By

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In 1918 Kaiser Wilhelm II abdicated his throne because the German people were starving and demanded food. The food factor, therefore, was a determining circumstance in Germany's downfall in 1918; and the hope of winning World War II lies in keeping the German people prisoners in Western Europe until they are suffering from the want of food and clothing to such an extent that Hitler and his crowd, one fine day, will flee from the wrath of a disillusioned and outraged German people.

I speak with some knowledge of the pitiable plight of the German people following the last World War because I made some investigations regarding food conditions and the prevalence of diseases due to nutritional deficiencies in Germany and Austria about two months after the signing of the Armistice. A report of my findings was made to the Peace Conference in Paris in February 1919.

FOOD DEFICIENCY DISEASES IN GERMANY IN 1919

The Germans suffered more from a deficiency of milk, cream and butter and other fats, containing vitamins A and D, and fruits, containing vitamin C, than from the lack of vegetables and cereals, containing the various factors in vitamin B.

The children in Germany were the greatest sufferers from food deficiency diseases during and following the last World War. In January and February 1919 I saw many pale,

8. Augustine, D. L.: Studies and observations on soil infestation with hookworm in southern Alabama from October 1923, to September 1924, *Am. J. Hyg. (supp.)* 6: 63-79 (March) 1926.

9. Andrews, Justin: Hookworm disease and plans for its control in Georgia, *Georgia Malaria Bulletin (Hookworm Supplement)* 3: 64-78 (June) 1940.

*Read before the Northwestern Division of the Association, Florence, January 28, 1942.

undernourished children wearing paper clothes and paper shoes, trudging along over snow and ice-covered streets in a number of German cities and villages. Not one of them could remember when he or she had had milk to drink. They also had been deprived of citrus fruits for several years. As a result of these food deficiencies, tuberculosis, rickets and infantile scurvy prevailed to an alarming extent among children all over Germany.

Adults in Germany also suffered from a lack of foods during and after World War I. The jolly, overweight, rosy-cheeked German adults, whom I had known in Germany, while doing postgraduate work in Berlin in 1906, had disappeared. All the German men and women with whom I discussed food conditions in 1919 complained bitterly of semi-starvation. Most of them had lost from 50 to 75 pounds in weight. They were pale, evidently anemic, and many said they were so weak that they were unable to work.

All classes of Germans suffered much from skin diseases, partly because of a deficiency of vitamin A, and partly from lack of cleanliness, due to the fact that fats for making soap could not be had in Germany.

WAR BEER IN GERMANY

One of the major causes of dissatisfaction among adults in Germany was the poor quality and increased cost of beer. The consensus of opinion among the beer-loving Germans was that "the beer is dirty water and does us no good." Evidently the beer in Germany during and after the war had low alcoholic content. It was necessary to divert the use of barley from brewing beer to making bread. German physicians said that one of the compensations in Germany from the diminished consumption of beer, and other alcoholic beverages, was a decrease in the diseases associated with alcoholic obesity, including cirrhosis of the liver, diabetes, chronic nephritis and arteriosclerotic heart diseases.

NO PELLAGRA IN GERMANY

Having been interested in pellagra for many years I inquired particularly regarding the prevalence of that disease, now known to be due to a deficiency of nicotinic acid, one of the factors in vitamin B. German physicians, including dermatologists, said that all the infectious diseases of the skin had increased enormously during and

after the war, but none of them had seen any case resembling pellagra.

German war bread was made largely of whole grain, barley, beets, potatoes, turnips and other tubers ground into a thick flour. Bread made from the mixture was black, tough and unpalatable—barely edible—but it contained the various factors in vitamin B. The Germans are good truck gardeners and even at the end of the war they had plenty of vegetables, which are rich in vitamin B. No doubt there were vitamin B deficiency diseases in Germany, but they did not prevail to the same degree as did tuberculosis, rickets and scurvy due to deficiencies of vitamins A, D, and C, respectively.

THE MISTAKE OF KILLING MILK CATTLE TO SUPPLY SOLDIERS WITH BEEF

The Germans made the mistake in the last war of killing their milk cattle to supply beef for their fighting men; and as a result they deprived the civil population, particularly their children, of the most essential nutrient for the human body.

Among the humane acts of France, Great Britain, the United States, and their Allies after the World War I was to send milk cattle to their defeated foes, who had murdered thousands of undefended old men, women and children in their air raids over Paris and London. The miserable conquered Germans, who cried *kamerad* when the fighting became hard, were arrogant, though half-starved after the last World War; and they showed no signs of gratitude for the generosity with which they were treated at Versailles, where the fairest peace treaty that was ever made in Europe was consummated in 1919. The idea that the Germans were treated unfairly at the Paris Peace Conference and by the League of Nations is pure fiction, manufactured for propaganda by Hitler and the isolationists in the United States. Is any one now so stupid as to doubt that Hitler's war is one solely for conquest?

UNDERNOURISHED GERMANY

Knowing something of the food conditions and nutritional diseases in Germany in 1917, it is difficult for me to believe that the nutrition of the German people at the beginning of World War II was as good as when they began their effort at world conquest in 1914. Dr. Tom Spies of Birmingham and Cincinnati, who was in Germany shortly before the present World War began, said that

he saw many evidences of food deficiencies among the Germans at that time. Others have made similar observations. William L. Shirer, early in January, 1942, stated that the Germans suffered from the lack of food in the winter of 1940 and 1941; and that the food and clothing shortage in Germany is more acute this winter.

Granting that the German people were well nourished in 1939—which I do not believe—still, thanks to the British Navy, they have been prisoners in Europe for two years; they, therefore, have not had an adequate milk supply to protect them against tuberculosis and rickets; and they have not been able to get sufficient citrus fruits to prevent scurvy.

STARVING CONQUERED COUNTRIES

It no doubt is true that the Germans have robbed the countries which they have conquered of meats, dairy products, wheat, barley and other cereals, and fruits; and that the inhabitants of Czechoslovakia, Poland, Norway, Denmark, the Netherlands, France, Yugoslavia and Greece have been robbed to the point of starvation; but even so, that food supply has been exhausted by this time, and those countries conquered never again will supply much food to the despised Germans.

According to reports from Denmark, the Netherlands, Belgium and Norway, the dairy countries, the Germans have commandeered milk cattle for beef for German soldiers. If so, the Germans will suffer from a lack of milk as they did in the last World War. Even if the Dutch, Norwegians and Belgians wanted to supply Germany with milk and butter fat, they have to import food stuff for their cattle from Great Britain and the United States and it is probable that the quantity of dairy products on the continent of Europe has been reduced by at least seventy-five per cent. It also seems likely that the supply of poultry and eggs has had, or will have, a corresponding decrease. It therefore seems probable—I think certain—that in one or two years the German morale will become so weakened by malnutrition and the people will suffer so much from starvation that they will rise up and destroy those who have led Germany into another futile war of conquest.

FREEZING GERMANY

The German people are suffering this winter from the effects of cold. They cannot

buy warm clothing this winter; and in another year new cotton and woolen blankets and wearing apparel of all kinds will not be available even to the wealthy classes in Germany. In World War I the Germans sacrificed their source of wool supply by killing their sheep for meat for their soldiers. Besides, Europe cannot supply herself with wool; and Germany cannot get cotton. Already the Germans have taken blankets from the beds of Norwegians to send to their freezing soldiers in Russia.

Douglas Miller, in an excellent article on "What it Cost Hitler" in the September number of the Atlantic Monthly, estimated that even in the winter of 1941 and 1942 there is a shortage of clothing and blankets in Germany; and that by the winter of 1942 and 1943 paper clothes will have to be worn as they were the last two years of World War I. In January and February of 1919 the only clothing in the stores of a number of German cities was made of paper. It should be said, however, that the Germans showed great ingenuity in making shirts and clothing of all kinds out of paper.

In 1919 the Germans could not get leather for any purpose and they had to wear paper shoes. Some of their paper shoes were water proof and they were fairly durable, though they could not compare in durability with leather shoes.

Reports from Germany and Switzerland seem to show that only the rich Germans can buy fuel for heating their homes; and the masses will suffer from cold this winter as never before. As a result colds, influenza and pneumonia will play fearful havoc among the German people.

A press dispatch from Switzerland on Sunday, January 4th, 1942, stated that coke shipped from Germany sells for forty-two dollars a ton; so that the price of coal and coke in Germany at this time must be prohibitive to the masses of the German people.

THE END OF HITLER AND THEN AN ENDURING PEACE

From the facts presented it is evident that the German people will have to suffer because of the stupidity of their villainous and insane leaders. How long they can be misled by Goebbels' propaganda no one can say, but when men and women get hungry, cold and sick, and when they see their children suffer from cold and malnutrition, they will begin to think for themselves; and then they

will wreak their wrath upon those who have brought such disaster to their Fatherland.

Although all the avenues of public information available to the German people, including the newspapers, magazines, books and the radio, are engaged in propaganda to keep up the morale of the Germans, the effort will fail. The loss of between one and two million soldiers in Russia—the cream of the German Army—is making other millions mourn in Germany. Weeping mothers and fathers, brothers and sisters, cannot be made to believe that the Germans are winning the war; and the rift between Hitler and the General Staff of the German Army is not helping der Fueher's prestige among his suffering soldiers. So with defeat by the Russians, and its consequences, and starvation facing the German people, the year 1942 has an auspicious beginning for the Allies and for all humanity.

The exact date of Hitler's downfall cannot be predicted; but a reasonable guess is that the end of World War II will come in 1943; and then the United States will play a large part in bringing about an enduring peace for all the nations of the earth. We shall suffer much in the meantime, while the Japanese are being disposed of, but not so much as the Germans will have to endure; and surely the sacrifices of the American people to destroy Hitlerism and promote permanent peace throughout the World will seem small when compared to the ends which will be attained.

THE FOOD FACTOR IN WINNING BATTLES IN WORLD WAR I

No doubt Germany would have won World War I had it not been for the aid given by the United States in supplying England, France and Italy food for their civilian populations and for their armies. I was told by Italians qualified to know that after the Caporetto disaster in 1917, in which the Italian soldiers were routed and ran like sheep until safe beyond the Piave River, Italy was suffering so much from lack of food that she would have made a separate peace with Germany and Austria-Hungary had it not been for the timely arrival of two Red Cross ships laden with food from the United States. The arrival in England, France and Italy of large supplies of all kinds of foods in 1917 and 1918 not only improved health conditions but kept up the morale of all classes in those countries while the Allied Armies in France were winning battles against the inadequate-

ly fed and poorly nourished German soldiers.

Napoleon's hackneyed phrase "an army moves on its stomach" applied in France in 1918. The 2,000,000 American soldiers in France in 1918 were the best fed and the soberest fighting men who ever fought on European soil. In Cantigny, Belleau Woods, Chateau Thierry, San Mihiel and in the Argonne-Meuse district American soldiers won battles that finally won World War I for the Allies. Likewise the French and British soldiers won great victories, partly because they were better fed and had better morale than the armies of Germany and Austria-Hungary.

In October 1918 I saw 5,000 German prisoners lined up on a street in Theims the day they were captured by the French. They were half-starved, bedraggled and miserable looking. The only food given these 5,000 prisoners by the French on that day was half a loaf of black French bread for each soldier. The German prisoners also were given water which they drank as they ate greedily the unpalatable French bread. No doubt the German prisoners were given better food after they were placed in French prison camps. There can be no question but that the morale of the German and Austria-Hungarian armies was broken partly by lack of nutritious food, a fact which accounted for their willingness to surrender in large numbers without making resistance to the Allied armies.

The food factor has played an important role in keeping up the morale of the British in England and Scotland for the past two years. No finer demonstration of courage and willingness to make sacrifices for home and country has been recorded in history than that shown by all classes of Englishmen during the war with Germany. Certainly the fact that American food was arriving daily in larger and larger quantities was stimulating to the besieged population of England, Scotland and Wales.

While food has been more or less plentiful in England, and the supply increasing, the food situation in Germany grows from bad to worse. As malnutrition and food deficiency diseases increase in Germany the German morale will grow weaker until in a year or two, probably during the winter of 1943, the last desperate effort at world conquest by the Germans will have collapsed.

THE FOOD FACTOR IN DEFEATING JAPAN

In spite of the general impression that the Japanese require very little food, malnutrition and deficiency diseases may become an important factor in the defeat of imperialistic Japan. A recent article states that the Japanese subsist upon rice, fish, and a few vegetables; and that the tight little island of Nippon supplies its inhabitants with all the food they require. In this article it was intimated that the Japanese soldiers and sailors could starve and fight too. This statement is contrary to all the known facts about nutrition of the human body, and the Japanese, in spite of bestial qualities, are human beings.

I have no personal knowledge of food conditions and deficiency diseases in Japan but certainly at one time the Japanese suffered frightfully from beriberi, a fatal disease of the nerves, due to deficiency of vitamin B₁. The Japanese Navy was said to have been impotent in the Russo-Japanese war because of this malignant disease. At that time Japanese naval officials observed that British sailors were free from beriberi, and when they substituted British rations for the food given the Japanese sailors, the latter ceased to have beriberi.

Thirty years ago beriberi was a scourge among the Japanese, Chinese and the East Indians. In 1911 Casimir Funk, working in the Lister Institute in London, proved that beriberi is a deficiency disease caused by eating white rice. When whole grain rice was substituted for white rice, beriberi almost disappeared in the countries in which previously it had been the cause of a large proportion of the illness and deaths.

The fact seems to be that what might be called the normal state of nutrition for the Japanese is on the borderline to beriberi and other deficiency diseases. If so, when the American and British blockade of Japan becomes effective as it will in a few months, and the Japanese cannot fish in waters surrounding the island of Nippon, their principal source of proteins will be cut off to a large degree. Likewise agriculture on the island will be interfered with so that the Japanese rice and vegetable crops will be reduced very materially. It, therefore, seems that with even a slight reduction in the food now available to the Japanese, their morale will be lowered and the fighting qualities of their soldiers and sailors will be reduced to

the point where the disillusioned little Japs will overthrow the military clique who carried them into war, and beg for peace.

Certainly American soldiers and sailors are the best nourished fighting men in the world and they can be expected to carry on the war to victory.

THE INTEGRATION OF VOLUNTARY
AGENCY PERSONNEL IN A COUNTY
PUBLIC HEALTH PROGRAM*

By

A. J. PERLEY, M. D.†
Lafayette, Alabama

Shortage of personnel is not a particularly new or unexpected problem which is now confronting health departments. Even under normal conditions such a situation was predictable. There is no doubt that public health and preventive medicine have a definite appeal to the mind of the average person. As he becomes better acquainted with the accomplishments of a health program, there will naturally arise a greater demand for public health services. Unfortunately, there exists a strange dissociation of ideas in the mind of the public on such lofty matters as health programs on the one hand, and such common, everyday headaches as finances and budgets on the other. The national emergency has created additional problems, and placed new responsibilities upon the shoulders of the health department which even increased appropriations cannot always solve. When all these factors are considered, it is apparent that there is now a greater need for economy in personnel than ever before, and that efforts must be made, whenever possible, to augment the limited regular health department personnel in order to carry on a balanced public health program.

It is a generally recognized principle that the health of the public is a responsibility of the government. This concept will be emphasized more strongly during the coming months of our total war efforts. In Alabama the responsibility for the public health has been delegated by the government to the

*Read before the 1942 conference of the Public Health Workers of Alabama at Montgomery, February 10.

†Health Officer of Chambers County.

medical profession. The county board of health, through the county health department, thus is designated as the official local agency responsible for promoting and enforcing health measures. All other agencies in an area which are interested in public health are collectively designated as unofficial or voluntary health agencies.

The rise of official agencies responsible for the public health is comparatively recent history. Voluntary health organizations were in existence many years before authorities recognized that health is a public responsibility. The care of the sick and wounded by religious orders within the walls of monasteries is probably the best example of successful voluntary health agency effort. Voluntary health agencies have persisted from the Middle Ages to the present day. Some of these are still in the hands of religious orders; others are non-sectarian philanthropic groups, such as the modern foundations; and still others were established not for the purpose of promoting health but primarily to protect the interest of their founders and patrons. Although this motive appears to be ulterior and the humanitarian aspect is incidental, this type of health agency will continue to exert an increasingly positive influence on health, in industrial areas particularly, because of the ever greater recognition industry gives to medical services for the benefit of its employees.

An official health agency, such as the county health department, has a multiplicity of functions, many of which are prescribed by law or by public sentiment. Official agencies are tax supported, hence they are responsible, in the ultimate analysis, to the public, and often must bow to its demands. It is now an accepted axiom that public health is purchasable, and that, within natural limitations, a community can determine its own death rates. But, whether the personnel or resources of the official agency are adequate for the execution of its prescribed duties is too often of little consequence to local fiscal authorities.

Voluntary health agencies, on the other hand, have adequate funds to carry out the programs they set out to do, and are not bound by laws or rules. No voluntary organization has a permanent plan. Its policies may change with each change of directors. Because of flexibility of policy, voluntary agencies are in a position to do work of an

experimental and pioneering nature, and whenever necessary may step in and supplement the services of official agencies.

With the exception of voluntary agencies of the industrial hygiene type, voluntary health work now constitutes a diminishing proportion of total health efforts expended. This does not necessarily mean that less work is being done by voluntary agencies, but that whenever finances permitted official agencies expanded their services to a greater proportion. This is a normal trend. In conformity with the principle that the health of the people is the concern of the government, health services should be placed on an official and business basis, while the activities of voluntary agencies should be directed to specialistic services, and to fields of experimentation and pioneering. Indeed, this appears to be the accepted principle of leading foundations.

With these preliminary remarks on the relative position of the official health agency and unofficial voluntary organizations, it becomes apparent that the county health department with its official position and numerous responsibilities is often tremendously handicapped by insufficient personnel. Until a fair status of financial independence is attained by the county health department, this situation will persist. But the situation is not always quite as hopeless as it may appear. Some counties are fortunate in having one or more voluntary health organizations which many of us overlook in our self-centered programs. All of these agencies, large and small, present possibilities which are worth looking into. By intelligent integration of voluntary agency personnel, the health officer may considerably increase the effective forces working toward a well-planned public health goal. At this point it should be emphasized that accomplishment is gauged by the sum-total of health services rendered by all agencies in the area, and not by the official agency alone. The important thing is that the services be planned to fit the needs of the community, and that accomplishments be gauged to determine to what extent they meet the needs.

The question arises: Will the voluntary agency consider coordination of activities with the county health department? The answer to this question lies partly with the voluntary agency, but to a greater measure with the health department. In the first

place, the county health department must have a well established reputation and should command the respect of the community. It should be a known policy of the department to do fewer things, but to do them well, rather than to try to do all the things that should be done under ideal circumstances. A voluntary agency will hesitate to affiliate itself with an organization that enjoys a poor reputation.

Cultivating cordial relationship with members of the voluntary agency before any designs at coordination are made is considered good psychology. Voluntary agencies are jealous of their prerogatives, and one must be well acquainted with their history and policies before attempting integration of personnel. Some agencies have well defined policies and a highly trained technical staff; others may be a product of circumstances, growing by accretion rather than expansion. Such agencies as specialistic foundations merely need an initial agreement as to purpose and mutual policies. Local voluntary agencies need more detailed guidance, but all agencies need some guidance toward a common goal.

The voluntary agency must realize that definite benefits can be secured through close integration of activities with the health department. A health department should have no difficulty convincing anyone of possible aid and service. The facilities of the health department, the variety of routine service offered to the community, and the available advice of experts should appeal to any group.

There are numerous occasions for a voluntary agency to ask for service, aid or cooperation. With preliminary groundwork and mutual understanding, a proposal for integration of personnel to attain a common goal in public health should meet with sympathetic response. Where the voluntary agency has a director trained in public health principles, the transition from an independent activity to an integrated program becomes simplified. Where no such director exists and the scope of activities of the voluntary agency is wide enough, it is desirable to secure a person with a balanced training who would, among other responsibilities, act as an advisory and liaison member. The salary of this member should be paid by the participating agencies to obviate one-sided loyalty and to assure complete interest in

the program. The addition of such a member will be amply repaid by eliminating jealousy, promoting efficiency, and furthering uniformity of purpose.

Standardization of procedure to conform to the best accepted practice will be one of the first problems encountered. All members of the personnel will have something to learn and to give. Record keeping will be a problem of no less importance. Just how important good records are is recognized by all official agencies and by all leading voluntary health agencies, but the personnel of many small voluntary agencies still look upon them as an unnecessary burden. In the integration of personnel, records are of particular importance since they will furnish an index of accomplishment and trends. The detailed records of specially-trained public health personnel may seem an unsurmountable barrier to the newly-inducted voluntary personnel. It may be advisable to adapt standard records to the activities of voluntary agency personnel by eliminating fancy frills but preserving main headings with corresponding code numbers. As functions of the combined agencies become standardized in the respective fields, greater uniformity of records can be developed.

Health education must go hand in hand with health work for the combined personnel. This is essential not only to keep abreast of times, but also to maintain before the personnel of the health agencies the objectives of a balanced public health program. Joint meetings should be held where an opportunity is presented for the exchange of ideas and the discussion of problems. Such meetings will also foster an *esprit de corps*, a realization that everyone is part of an organization, with an important share of responsibility for the public health program resting on his shoulders. Intervals between meetings should be bridged by news and circular letters pertaining to policy, changes of procedure, etc.

Monthly reports should be submitted by all workers to a central office. These reports should be coded to correspond with those of the official agency. The combined yearly report should give appropriate credit to all participating agencies. Similarly, the annual appraisal of health activities in the area should take cognizance of all health efforts, and the results of the appraisal should be discussed at a joint meeting, where

suggestions for improvement of services should be solicited.

Once close integration between official and voluntary agency personnel is established, the temptation may arise to group all activities under the health department and to place the official agency in a preeminent position. I feel that this would be an erroneous course. The preservation of the individuality of the voluntary agency would act as a stimulus to greater efforts. We must never forget the primary purpose for which the voluntary agency was established. If we are dealing with an industrial nursing organization, then its place in the general program should be with emphasis on industrial nursing and not on maternal hygiene, even though, in our opinion, the maternal hygiene problem may deserve greater attention.

The subject of voluntary agencies is essentially a subject of specialized services. The mere fact that voluntary agencies exist is evidence that there is a need for them. It is our responsibility, as an official agency, to see that they fit in the well-planned public health program of the county, and that all duplication and inefficiency are eliminated, and weak points strengthened whenever possible. In this day, when shortage of personnel is felt more keenly than ever before, integration of all facilities should be our key note.

Hyperthyroidism in Childhood—Of the classical symptoms of hyperthyroidism, the four most frequent in children are nervousness, enlarged thyroid, exophthalmos and tachycardia.

Nervousness is the outstanding feature in children. This is usually shown by hyperactivity and emotional instability. There is often an accompanying personality change, with marked restlessness and impatience. The children of school age develop into misfits, being unable to get along harmoniously with the teacher or fellow pupils. There is also a decline in their school accomplishments.

The presence of an enlarged thyroid is one of the earliest and most constant findings. The consistency of the gland is usually firmer than normal, and as a rule does not become excessively large. The enlargement is usually symmetrical and very rarely becomes intrathoracic or retrosternal.

Exophthalmos occurs with greater frequency in children than in adults. It is not an early sign, but is usually present by the time the patient is seen by a physician.

Tachycardia is a constant finding in children, but is only rarely a subjective symptom.—*Pierce, Texas State J. Med., March 1942.*

SPECIAL ARTICLE

LET THEM LIE

A FIRST-AID MANUAL FOR MOTORISTS

By

H. Earle Conwell, M. D.*
Birmingham, Ala.



ARTICLE 1.

A series of articles dealing with highway accidents, describing each and telling what to do and not to do in such cases, is being published for your information. It may mean the saving of a life when life is hanging in the balance, when every second counts and everything depends on what you do for the accident victim and how you do it. Will you be prepared?

Excitement, hurry, and improper handling complicate injuries. Rushing a patient to a hospital increases shock which often results in death.

Call the highway patrol: they know what to do in case of accident. Have the doctor or ambulance come to you. Let 'em lie. It will save lives.

ARTICLE 2.

Shock—Its Causes and Symptoms

Shock, a great contributor to accidental deaths, is a sudden lowering of the vital function of the nervous system.

Shock is caused by injury or emotion. One may increase the other. You may experience shock by only seeing the accident, while, in

*Chairman of the Association's Committee on Accidents and Industrial Health.

Indebtedness is expressed to Mrs. Margaret Putnam of the staff of the Birmingham Age-Herald for her assistance in editing the original articles, published first in the Age-Herald as a daily, consecutive series, and reproduced in five other Alabama newspapers.

Reprints may be had through Dr. Conwell.

case of injury, excitement and hurry increase shock. A badly injured person may have very little shock while another receiving only bruises may be severely shocked.

The nerves that control the blood vessels are upset in shock. The arteries are contracted in this disturbance of nerve supply, thereby interfering with the blood supply to the brain and to the surface of the body.

In severe shock, when too little blood reaches the brain, death occurs.

This condition is not dependent upon the number of bones broken but the effect on the heart and brain when the blood supply is blocked.

You may recognize shock by a moist or dripping-wet skin. The patient may be cold and clammy regardless of the weather, his pulse will be rapid, he usually will not be thirsty and seldom complains of pain even though he may have a bone broken.

If he insists he is feeling fine and is restless—be careful—then is when shock is often more severe.

Remember, always notify the highway patrol when an accident happens.



ARTICLE 3.

Shock and How To Control It

Shock is the most serious result of an accident and causes more deaths than all other causes combined.

Shock can be controlled though, and many lives saved.

To control shock: Stretch the patient out flat on the side of the road with the head lower than the rest of the body. Cover him with coats, keep him warm, quiet and still. If possible, give him coffee, or its equivalent.

Cushions from the automobile make a warm, soft bed for the patient. Keep him there until shock is controlled, but if the weather is bad he may be moved to a nearby shelter. Call for medical aid immediately.

Keep him there until the pulse has slowed and the skin is dry.

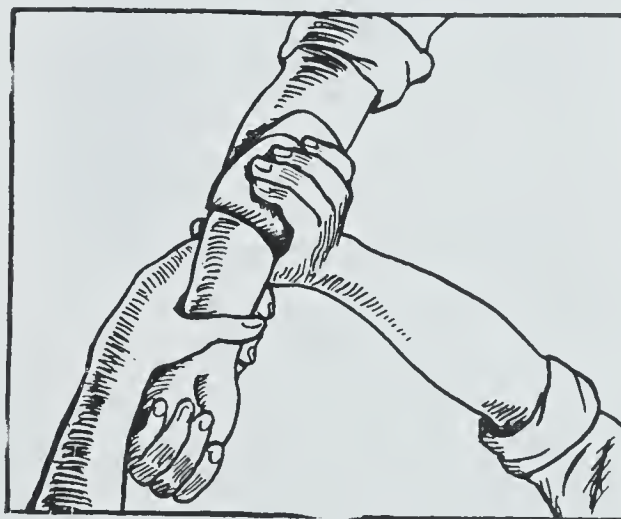
If a broken bone is apparent, keep him there; if there is a severe head injury, keep him there until shock has been controlled or improved.

If he is placed in a car and chilled in a race to the hospital, he may die—a victim of exposure, hurry and excitement.

If the patient is not kept quiet, still and warm, shock will be increased, and he may die on the way to or upon entering the hospital.

Remember, keep him warm, quiet and still—let him lie.

The highway patrol should always be called.



ARTICLE 4.

Shock—Don'ts To Observe In Treating Shock

Never place the patient in a car, open the window to give him chilling air and dash him to the hospital. This increases shock and he may die from that and exposure. It will not be the injury alone that caused his death in such circumstances.

Never attempt to set a broken arm or leg or any bone in the presence of shock. Manhandling increases shock.

Do not permit anyone else to manhandle the patient; do not permit people to ask him questions, feel his pulse or otherwise annoy or disturb him. Take command, keep him warm, quiet, still—keep his head lowered.

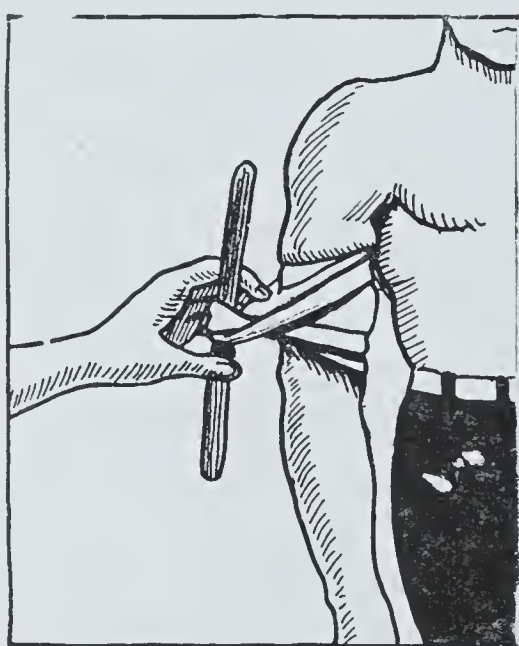
If bleeding is present, stop the hemorrhage immediately, but do not neglect shock.

Place a handkerchief over the wound and use light pressure. Change when necessary. Apply a tourniquet only when the blood spurts. A tourniquet should be released slowly and tightened again immediately every 15 minutes. This allows the blood to cir-

culate beyond the tourniquet, thereby preventing gangrene.

Again, shock may be easily recognized by a cold, clammy skin, state of excitement, rapid pulse and false talking. He may say he feels fine, even though he has bones broken.

Highway patrolmen know how to give first aid.



ARTICLE 5.

Hemorrhage

Hemorrhage may be slight or profuse, depending on the size or depth of the wound.

Blood comes from three sources: It may ooze from the tissues; it may leak from cut or torn veins, or it may spurt from the arteries as it comes from the heart.

Bleeding may stop itself by clotting, which requires from three to five minutes.

Clotting is faster when the blood has something upon which to congeal. A clean handkerchief or a piece of tissue placed in the wound will speed clotting.

When hemorrhaging is present, keep calm and see what type of bleeding it is. If it oozes or comes freely from a vein, place a clean dry handkerchief into the wound and hold it there gently—not tight.

Pressure applied lightly as described will curb bleeding.

If the handkerchief or tissue becomes soaked after a few minutes, apply another one. A few changes, if not too tightly wound, will stop oozing or bleeding from the vein.

A tourniquet must be used when an artery, which pumps the blood from the heart, is cut.

As you probably know, a tourniquet is something tied around the limb above the wound and tightened until the spurting of

blood is stopped. You may use your necktie, stocking, belt or anything convenient that will serve the purpose.

To apply a tourniquet, wrap it once around the limb about three and a half inches above the wound and tie well. It is well to place the tourniquet over the clothing to prevent pinching the skin. Then with a pencil or stick as a lever, tighten the band just enough to stop the spurting.

Loosen every fifteen minutes for a short time to permit the blood to circulate in the extremity, then tighten again.

Remember, blood will congeal if given the chance.

ARTICLE 6.

Wounds—Infections

An abrasion is an injury in which the surface skin is rubbed off. This is a superficial wound and does not bleed much.

A contusion is a wound where the skin is not broken but is bruised. The blue-brown color is the result of broken blood vessels underneath.

Cuts are clean-cut wounds through the skin. They may reach any depth and usually bleed more than any other wound.

Lacerations are irregular jagged cuts through the skin and may be deep enough to tear the muscles. Bleeding may be great. Control it as you have been told. Treat shock.

Puncture wounds are caused by an object being pushed or driven into the skin and through into the flesh. Unless a blood vessel has been broken, bleeding will be slight.

Control bleeding and prevent infection.

Infection is the result of germs entering and contaminating the wound. Everything, even the air, is full of bacteria which may enter the wound and set up infection.

You may prevent or limit infection by proper treatment.

Control bleeding, let them lie, treat shock. Call a doctor!

ARTICLE 7.

Treatment of Wounds

Remember, the important thing in the treatment of wounds is first to control bleeding and prevent infection. But don't forget shock.

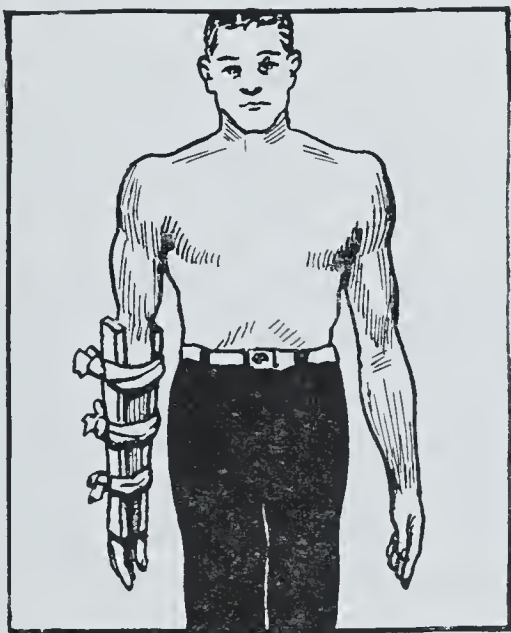
Use a tourniquet for spurting blood, slight pressure for slight bleeding.

Use only clean material to dress or bind the wound. If necessary, the wound may be sponged with water, or soap and water if available. Usually the best course to pursue is do as little as possible to the wound itself. Let the doctor attend to the wound.

Every car should carry a package of sterile gauze; it is cheap, and may save many dollars in an emergency.

Emotion and excitement increase shock. Do not rush the patient to have the wound sewed up. Wounds will usually be ready to heal even within a few hours if kept clean and open so the rush isn't necessary. Hurry is detrimental to the patient.

If necessary, control bleeding, wash off wound, apply dry, clean bandage. Treat shock and let them lie. Call for medical aid.



ARTICLE 8.

Broken Arms—Simple Fracture

A broken arm may be detected by the fact that it hurts badly and any effort to move it increases pain. The patient may be able to bend the elbow or use the hand but will be unable to lift the arm.

You may feel motion between the elbow and shoulder by gently taking hold of the elbow.

The first thing to do is to treat shock. Then prepare to put on a splint, a bandage or sling.

A splint is something tied in place to prevent the broken ends of the bone from moving. Pain is increased by motion and produces greater shock.

A splint can be made of anything at hand that will be firm enough to hold the injured limb steady; a paper folded, a strong branch, perhaps a long, straight tool in your automobile.

Fasten the arm snugly to the splint with handkerchiefs, neckties or strips of shirts, but do not bind too tightly.

If the patient has numbness or the hand swells, loosen the splint to permit better circulation.

These conditions also apply to a bone broken below the elbow, which receive the same treatment as when broken above the elbow.

Learn first aid.

ARTICLE 9.

Broken Elbows

Broken elbows occur frequently in automobile accidents where the passenger or driver rests his arm on the window with the elbow protruding called "automobile elbow fracture." It may be struck by a truck with overhanging side or may be sideswiped by another car.

The safe thing to do is to keep the arm inside the automobile!

In event the elbow is broken a jack-knife handle usually present in any automobile will make a fine splint. Or a bundle of branches tied to the tip of the fingers or a newspaper tightly folded to form a brace. The support should then be tied in place with the elbow held straight.

If the skin is broken and the bone end protrudes, place a clean handkerchief or bandage over the wound and control bleeding as previously described.

See article on infections.

Splint them where they are. Let them lie. Treat shock. Seek medical aid. Call the state highway patrol.

ARTICLE 10.

Broken Arms

A simple fracture means that a bone is broken, without any break in the skin, while a compound fracture means that one end of the bone or bones protrudes from the skin.

A compound fracture is more serious than a simple fracture, because the bone end, the marrow, the tissues and the muscles are exposed to infection by coming through the skin, clothing and perhaps into the dirt. When the bone is drawn back into the skin it carries the germs which may produce blood poisoning. In presence of compound fracture, treat shock.

Apply a tourniquet for a time if bleeding is severe; use gentle pressure with a band-

age if bleeding is slight. Apply a clean, dry handkerchief, but do not bind tightly.

Treat shock.

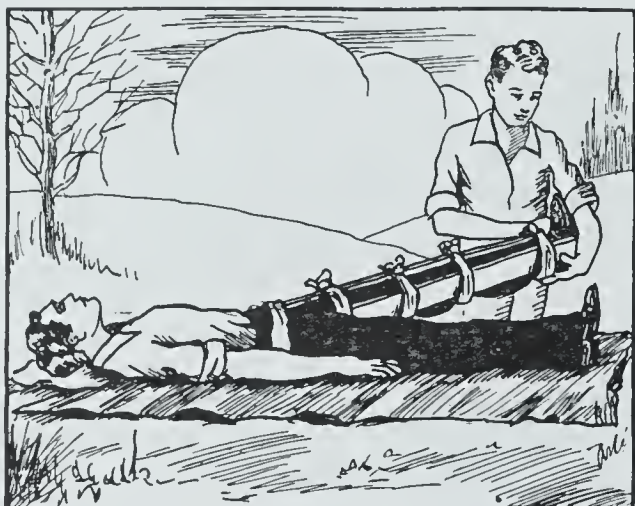
Then apply a splint as before described.

Transfer quietly to a hospital. No need to rush and create excitement for the patient. Shock kills—the bone can wait.

Splint them where they lie.

Treat shock.

Seek medical aid. The state highway patrol can help you.



ARTICLE 11.

Broken Leg or Thigh

In case of a broken thigh or leg shock is severe and sometimes causes death—the broken bone will not kill, shock will.

Simple fracture is a broken bone which does not have a wound opening through the skin. Compound fracture occurs when the bone sticks through the skin.

The victim of a broken thigh will usually be pale and sweating and will suffer great pain when he tries to move the leg.

A support must be applied while the patient is flat on his back. Keep him warm. Use anything available for a splint that will reach from the armpit to the end of the foot; branches, newspapers, anything that can be held securely to the body with belts, ties or strips of clothing. There should be another splint down the front of the leg and on the inner side of the leg from the crotch to the foot. Each should be snugly tied on.

Keep him warm and quiet and wait for a conveyance to take him to the hospital. In the absence of an ambulance, a truck will do very well, as the patient can be laid out flat. His leg can thus be held straight and steady—with the head pointing to the slope of the road.

Never cram the patient into a car. It may cause the simple fracture to become a compound one. This happens, you remember,

when the bone end sticks out through the skin. Chances for blood poisoning and infection will be greater and shock will be increased.

A broken bone will wait—shock kills.

If the hip is broken, the patient will be unable to raise the thigh or cross the legs. The knee will be rolled outward. Treat shock.

Splint them where they lie. Keep them flat. Bring them to the hospital, lying flat, warm and quiet.

Pain is relieved by splinting and shock is lessened.

Remember—shock causes more deaths than all other results of highway injuries combined.

Let them lie. Treat shock and splint them where they lie.

ARTICLE 12.

Dislocated Joints—Shoulder, Elbow and Wrist

A dislocation is where one of the bones forming a joint is out of its normal place. It is more painful than a fracture, and shock is usually greater. You may recognize a dislocation by the fact that any attempt to move that joint will increase pain, motion will be limited, and there is deformity.

If the dislocation is in the shoulder a lump may be felt in the armpit. In this event the patient will be unable to place the hand on the injured side on the opposite shoulder.

Lay him flat, apply a pad between arm and body and bind to the body by means of a tie, belt, or whatever you have handy. This will remove pressure from the muscles.

Do not attempt to pull or jerk the dislocated bone into place, as you may injure the nerves and cause paralysis of the arm or hand.

Remember the damage you may cause—let him lie still.

There may also be fractures of other bones about the joint unknown to you. Remember the damage you may do. Handle him as little as possible.

Lay him flat, place a pad of folded clothing between the arm and chest and gently bind the limb to the body.

Treat shock—splint him where he lies.

Call the doctor.

ARTICLE 13.

*Dislocation of the Hip—Knee and
Ankle Injuries*

Shock is usually more severe in dislocations of the lower extremities than of the upper.

A dislocation of the hip results in the thigh being held partly flexed (bent) and the knee is flexed, turning in and against the other knee. To attempt straightening is very painful.

Lay him flat on his back or on the uninjured side, leaving the thigh and knee bent in the most comfortable position. Bind the lower limbs together with a belt or something, first placing a couple of folded coats between the knees.

Keep the patient warm, quiet, and give him a drink. Treat shock.

Splint them where they lie.

A knee injury is very common in automobile accidents, but a dislocation of the knee without fracture of some bone making up the knee joint is rare. Let the patient maintain the position least painful to him, place folded coats between the knees, and strap lower extremities together with a belt. Never try to force a bent knee into position. Serious injury may be caused in forcing the big blood vessels and nerves in back of the knee. If possible, apply a splint from arm-pit to foot, fastening it to the body and both legs.

Shock will be severe—treat shock.

Ankle dislocations usually mean the presence of a fracture, so do not try to manipulate. Splint with whatever is handy from above the knee to the sole of the foot on the outside—from foot sole to above the knee on inside. Keep warm, quiet and treat shock.

Splint them where they lie.

Always notify the state highway patrol in case of accident.



ARTICLE 14.

If Neck Is Broken—Let Them Lie

Keep the head straight and hold the chin up. This is the first thing to remember in case of a broken neck.

An injury to the neck bone is one of the most serious of all types and should be treated with caution. Your treatment may result in the patient having a simple broken bone, paralysis, or death.

The neck can be broken by a quick jerk or by being bumped against the top of the car. If the victim complains of pain when the head is moved forward—be careful—regard him as having a possible broken neck. If the arms or legs feel numb or tingly it is probable the spinal cord has been bruised. If the patient can't move the limbs it indicates the cord has probably been severed by being crushed. This happens when one of the vertebrae has been broken and jammed against the spinal cord. Keep the head straight and chin up. The nearer the chin to the chest the more danger of damage to the spinal cord!

Leave them where they lie, place a folded coat or coats under the neck to keep the head straight and the chin up.

If imperative to move him have someone hold his head straight and his chin up. Do not crowd him into an automobile. Do not try to make him sit up—keep him warm, quiet and still until an ambulance or truck arrives to convey him to the hospital. If a truck is used—lay him flat—have something under his neck and keep his chin up. Treat shock. Remember the highway patrol gives first aid.

ARTICLE 15.

Spinal Fractures

The backbone is made up of a series of round bones which are flat on top and bottom. Layers of cartilage and groups of ligaments and muscles connect the bones and the spinal cord is found in the back center of these round bones. The cord carries all the nerves from the nerve system of the body.

One of five things may happen when the back is injured.

A bruise or sprain may be present.

A bony process that comes off the vertebrae may be broken.

One of the round bodies of the vertebrae may be broken.

There may be a displacement between the vertebrae crushing the spinal cord.

Last, the spinal cord may be severed by being pinched or mashed by a break of one of the round bodies.

Treat all back injuries as a fracture—lay them flat—on their backs—a folded coat or cushion underneath—treat shock—seek medical aid.



ARTICLE 16.

Fracture of the Spine

You can tell if there has been an injury to the back in an accident victim by the presence of pain in the region but you cannot tell if there has been a serious injury or fracture unless the spinal cord that carries the nerves has been injured. A doctor often is unable to determine whether there is a fracture until an x-ray has been made. But when the cord has been crushed the patient will be unable to move his legs.

If the patient complains of pain in the back, keep him lying stretched out flat or better still, place him on his abdomen and chest and treat shock. If he is forced to sit up or is placed in an automobile one of the round bodies which may have been broken will slip backward and he will fold up like a jack-knife at the point the bone is broken, crushing the spinal cord.

Crushing the spinal cord is similar to mashing a banana without breaking the skin.

Let him lie, don't attempt to manhandle him. Wait for a stretcher to carry him—lying flat—to a conveyance where he can remain lying flat during the trip to the hospital.

Remember, if a vertebra has been broken, which you don't know, and you move him, causing a jack-knife injury, the patient is liable to be paralyzed for life. The broken bone in the back can heal but the crushed cord never heals. Let him lie—treat shock.



ARTICLE 17.

Fracture of the Spine—Continued

The proper method to use in bringing the back-injured person into the hospital is to leave him lying flat until a stretcher or blanket can be obtained upon which he is to be rolled and lifted to the waiting vehicle—stretched out and with adequate support to the middle of the back. He must be stretched out flat in the ambulance or truck with a small pillow or pad under the small of the back.

To attempt to lift him by the shoulders and feet will be to invite jack-knifing the spine which will crush the spinal cord. If he is lifted into a blanket, don't let the middle of the back sag as this is where support is most needed. It is better to have the head and feet extend over the ends of the stretcher, or support, than to chance the back being unsupported.

Remember these simple rules and help prevent disabilities.

Leave them where they lie—stretched out flat—treat shock.

ARTICLE 18.

Fracture of the Pelvis

In injury to the pelvis, shock is usually severe and is the first thing to be considered in treating the patient. He should be kept quiet, warm and still.

Strap the pelvis snugly with belts or a couple of shirt sleeves put together. Of course, it will be impossible to splint this injury, but much comfort will be felt by the patient if the pelvis is supported by strapping.

Do not attempt to lift the patient as one of the bone ends might puncture a body organ such as the bladder, and involve more serious injury.

Pain will be severe unless shock is so great there is only numbness felt by the injured one. Do not set him up, keep him flat, warm,

and quiet. Wait for the ambulance to come to him, and continue to treat shock.

Let him lie, warm and quiet and strapped about the pelvis snugly with belts. The state highway patrol should always be called to the scene of an accident.

ARTICLE 19.

Head Injuries

No matter how slight the outward appearance of the head injury may be, if unconsciousness occurs the brain is injured and extreme caution should be observed. Do not move the patient, leave him lie and control shock.

Brain injuries are the result of concussion, contusion, or hemorrhage; when a person is knocked out, it is due to one of these causes, or a combination of two, or perhaps all three. There is no way to tell, a bad scalp wound may be superficial; a wound appearing slight may be serious, so play safe; treat them all as serious and keep the patient still.

Concussion is a shaking up of the brain, but it does not leave after-effects, while contusion is an actual bruising of the brain. Hemorrhage is due to the rupture of a blood vessel in the brain or in one of the brain coverings.

Even in the absence of delirium or extreme restlessness there may be internal hemorrhaging present which would not cause delirium until the pressure of bleeding reached a certain point.

To move them about frequently increases bleeding and causes unconsciousness, paralysis, and sometimes death.

Bleeding tends to clot itself as you have been told previously, so give it a chance to stop by keeping the patient still, quiet and warm.

If weakness shows itself in the face when the patient tries to smile or a leg or arm on one side is weak, it means contusion or hemorrhage, or both may be present. If the patient drifts in and out of consciousness, the situation is even graver, as internal hemorrhage is present.

ARTICLE 20.

Head Injuries—Continued

Treat all head injuries as serious.

If the pulse is slow, around 50 or 60 a minute, the brain is swollen from the injury or internal bleeding is excessive, so be cautious. Keep him quiet, warm and still.

If breathing is difficult due to mucus in the throat, turn the face to one side with the head down hill so that it may drain from the mouth. This will prevent the injured dying from strangulation in his own secretions while he is unconscious and unable to cough up the mucus.

When there is bleeding from the nose or ears, the base of the brain has been fractured. There may be a fracture of the skull—with or without a scalp wound. Sometimes there is a crack on the opposite side from the blow due to transmitted force. The concussion or hemorrhage may also be on the side opposite the one receiving the blow. Where paralysis is present on one side of the body, the brain injury is on the opposite side. Paralysis may be total or partial, depending on the amount of the bleeding.

So do not move the patient or allow him to stand, sit or try to walk about; keep him flat, quiet—and, control shock.

If other wounds are present, follow previous instructions, but avoid all unnecessary handling.

Seek medical aid.

ARTICLE 21.

Chest Injuries

In chest injuries shock may be the most serious factor, so keep them flat, head down and feet up.

In event only a rib or two are broken, shock will not be so severe. But if shock is severe and breathing is shallow and fast—be careful.

If the pulse is extremely rapid, if the patient is clammy and pale and spits up blood, you may know he is injured internally. Perhaps the broken end of a rib has pierced the lung or several ribs have been smashed in and a section of the lung crushed. In this case a lot of blood may be spit up by the injured person.

The heart may be bruised in such an injury, or even ruptured, in which event he will bleed to death.

The important thing to do is to lay him down with sufficient cover to keep him warm. Don't pile him into a car and rush in—keep him quiet, warm and let him lie until shock has been controlled and proper transportation secured—preferably an ambulance.

First aid is taught at Red Cross stations. Why not follow this up with a course in first aid?

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SULFONAMIDES IN THE TREATMENT OF ERYSIPELAS

"Erysipelas, a common bacterial infection of the skin caused by the hemolytic streptococcus, is a disease entity particularly suitable for the trial of new chemotherapeutic agents. This is true because the location of the lesion makes it available for accurate study and because methods of treatment prior to the use of sulfanilamide were notably unsatisfactory." These are the opening lines of the recently published article by Shank, Maxwell and Bozalis¹ dealing with this subject. The authors treated 165 patients at the St. Louis Isolation Hospital between January 1939 and January 1941. "Sulfanilamide was the chemotherapeutic agent used in 102 cases, sulfamethylthiazole in 29 cases, and a new acyl derivative of sulfanilamide, S-22, or sulfabenamide, was given in 34 instances." The patients ranged in age from three months to beyond seventy years.

"There were 5 deaths in the group of 165, a mortality figure of 3 per cent. This compares with mortality rates of from 8 to 12 per cent before the use of sulfanilamide as reported by others. Necropsies were done

*Deceased.

1. Shank, Robert E.; Maxwell, Richard W., and Bozalis, George S.: Sulfonamides in the Treatment of Erysipelas, J. A. M. A. 117: 2238 (Dec. 27) 1941.

in 4 of the fatalities. In each instance there were complicating disease processes." Also 4 of the five patients who died were over 60 years of age.

"Of the 160 patients treated successfully, spread of the lesion was never noted after the first thirty-six hours of treatment. In general the erythema and induration were definitely subsiding after forty-eight hours, although some brawniness was present for from five to seven days."

"In 84 cases with initial fever the temperature was normal within twenty-four hours after beginning drug therapy and remained so throughout hospitalization. Fever persisted for forty-eight hours in forty-nine patients, for seventy-two hours in twelve, and in four patients for as long as four days." A small subcutaneous abscess beneath the eye requiring incision and drainage was the sole complication seen in the entire series and there were no recurrences of the erysipelas lesions."

The authors note that sulfanilamide "is inexpensive but has the disadvantage of producing toxic symptoms, particularly in older persons. Nausea and methemoglobinemia were frequent. There were occasional occurrences of toxic psychoses with complete disorientation of the patient. Infrequent cutaneous rashes were seen." The authors further inform us that "we have no evidence that sulfabenamide has wide applicability as a therapeutic agent. In erysipelas, however, it seems to be as valuable as sulfanilamide or sulfamethylthiazole, and in our limited experience it was gratifyingly free from toxic effects. None of the thirty-four patients had any methemoglobinemia, and there were no gastrointestinal disturbances. Two morbilliform cutaneous rashes were seen but disappeared despite continuance of the drug. Mental confusion, so frequently seen in aged persons when given sulfanilamide, was not observed with this new drug." And finally the St. Louis observers conclude that "the prompt response of erysipelas to the sulfonamides makes this the treatment of choice and renders other therapeutic measures obsolete."

It is indeed encouraging to read the report of Shank, Maxwell and Bozalis. Their work has been thorough and painstaking and the number of cases treated over a two-year period cannot fail to be impressive. And their conclusions serve to confirm and augment an

editorial which appeared in this space in the Journal of February 1941, the last paragraph of which is herewith reproduced:

"The very fact that such a horde of 'remedies' for erysipelas had been in use in past years was sufficient evidence to prove that most of them did little or no good. Even the erysipelas antitoxin, while bringing about splendid results in many cases, failed lamentably in many others and was always dangerous because of the possibility of a severe serum reaction. The long and tedious, painful and debilitating course of erysipelas

made it a disease to dread, even at best, and always the possibility of serious complications and even death lurked in the background. Therefore the advent of sulfanilamide has been most fortunate for both the victims of this dangerous disease and for the physicians who must treat them. Anyone who has observed the rapid, almost magic improvement of patients with erysipelas following the judicious use of sulfanilamide cannot fail to realize that, at last, an effective weapon against this scourge has been found."

MEDICAL PREPAREDNESS

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS*

The final steps in the printing and mailing of the enrolment form and questionnaire for physicians, dentists and veterinarians, described in the special article on the Procurement and Assignment Service which was published in the February 21 issue of The Journal, are now being completed. In the meantime the questionnaires originally published in The Journal of the American Medical Association and in the various state medical journals have served to provide the United States Army and Navy medical departments with additional names of physicians, mostly under 36 years of age, who stated that they were available for immediate service. The continuous development of the Army and Navy medical departments means that additional names will have to become available, in considerable numbers, daily for some months to come. Following the completion of internships for the current year there will become immediately available to both the Army and the Navy medical departments a considerable number, perhaps as many as 60 per cent, of those who are now completing their hospital training. Especially important is the statement from the Army Medical Department that commissions for limited service will be granted to physicians with physical disabilities, who may serve in the zone of the interior. Those who receive such limited service commissions will, of course, be accepted with waivers of disabilities.

*Reprinted from the Journal of the American Medical Association, March 14, 1942.

Every physician who receives the enrolment form and questionnaire should return it immediately in the franked envelop which will be enclosed. He will have opportunity to indicate a preference for various types of service. Once he has enrolled, he will receive a certificate indicating his enrolment for war service and will be privileged to wear the official button of the Procurement and Assignment Service.

In times like these the demands on rapidly expanding federal agencies are tremendous. The difficulties in securing a sufficient amount of competent stenographers and typists and of needed office material and of space have complicated greatly the problem of maintaining correspondence in the office of the Procurement and Assignment Service. It is hoped that physicians will be patient in awaiting replies to letters discussing their individual problems, realizing that the primary task at the present moment is to maintain for the Army and Navy medical departments adequate lists of men on whom they may call immediately. No doubt, as the work of the office becomes stabilized the promptness of reply to correspondence will be facilitated.

THE NEED FOR TRAINED MEDICAL PERSONNEL TO CARE FOR THE HEALTH OF THE MILITARY*

By

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One of the important tasks of the Army Medical Department is the procurement of all trained medical personnel necessary to

care for the health of the military. I propose not to discuss problems of procurement but, rather, to focus attention on Army medical installations which require trained personnel.

Mere mention of the more important fixed military medical establishments and the citation of how additional personnel are utilized with tactical units to furnish field medical service should make it clear that many individuals trained in medicine and allied sciences are vital if the Medical Department's objective is to be attained. This mission is the preservation of the strength of the Army by conservation of military manpower (1) by the selection, through properly conducted physical examinations, of only those men physically fit for military service, (2) by keeping such personnel in good physical condition, through application of modern principles of preventive medicine, and (3) by furnishing those who do become disabled with such aid in the form of evacuation and hospitalization facilities as will speedily restore them to health and fighting efficiency.

To assure maximum coordination and teamwork with all branches of the Army, it is necessary that medical service to the military be rendered by personnel who are a part of the military team and completely under Army control. The various groups of military medical personnel which collectively comprise the Medical Department are under the direction of Major General James C. Magee, the Surgeon General of the Army.

Caring for the health of the military is a far more complex undertaking than meets the eye. It cannot be accomplished by existing civilian medical agencies or by arbitrarily applying principles which have proved most satisfactory in civilian medical organization and practice.

In the armed forces, subordination to military control is of prime importance. At times this may require patient forbearance and suppression of individualistic action. Physicians are apt to find difficulty in adapting themselves to the standardization and regimentation which are designed to accomplish the greatest good for the greatest number, especially if they are unable to visualize the necessity for such adaptation.

Therefore, as I outline the manner in which trained medical personnel are utilized to care for the health of our army, we should bear in mind the foregoing considerations

and the restrictions that military necessity will impose.

The Army Medical Department is made up of a number of professional groups as well as a large complement of enlisted personnel and civilian employees. The professional groups include the Medical, Dental, Veterinary, Medical Administrative, Sanitary and Nurse corps. All members of these groups hold rank as officers, the nurses being given the "relative" rank of officers. The Medical Department is allocated enlisted personnel for fixed Medical Department establishments in the proportion of 4.85 per cent of the total enlisted strength of the Army. Further allocations of men to the Medical Department for assignment with tactical units vary with the tables of organization and activation of such units. It is safe to estimate that in time of war approximately 7.5 per cent of the total enlisted strength of the Army will belong to the Medical Department. During a major battle, such as the Meuse-Argonne in the first world war, more than 25 per cent of the field force, including patients and medical personnel, may be under direct control of the medical service.

It seems appropriate here to mention briefly the more important Army medical establishments and their functions and to indicate the various types of trained medical personnel which are needed.

MILITARY HOSPITALS

The physician entering military service from civilian life will have to make less of an adjustment to his Army duties if he is assigned to a fixed hospital than if ordered into the field with a tactical unit. But even in the large military hospitals he will encounter unfamiliar administrative procedures.

Army hospitals are classed either as "fixed" or as "mobile." The "fixed" hospitals may be of permanent or temporary construction. They usually remain at the same site for the duration of the war and for an indefinite period thereafter. The "mobile" hospitals are intended primarily for use with field forces in combat zones of theaters of military operations.

Fixed hospitals are classed as either "general" or "station" hospitals. The former vary in size from approximately five hundred to two thousand beds, while the latter vary from twenty-five up to two thousand beds.

It is contemplated that general hospitals be maintained to care for about 1 per cent of our total military population, while station hospitals are able to accommodate 4 per cent of the Army. These fixed hospitals are adequately equipped to meet the ordinary requirements of trained medical staffs.

The need for suitably trained medical personnel to operate the Army's fixed hospitals is obvious, and their duties do not differ essentially from the work of similar personnel in civilian hospitals of comparable size. It should be borne in mind, however, that the Army medical officer will deal with a different group of patients than is ordinarily encountered in civilian hospital practice. The illnesses and injuries which the Army doctor is most likely to encounter will occur largely among a class of young men who were physically fit when selected for military service. Therefore infectious diseases will be more prevalent than degenerative maladies, and acute ailments will predominate over chronic disabilities. Furthermore, persons with minor illnesses, who would ordinarily be treated at home in civil life must, in the Army, be hospitalized, as it is impracticable for sick soldiers to remain in barracks.

Military hospitals, with few exceptions, are not provided with internes. The work normally expected of internes must be done by medical officers, who thus are not only afforded an opportunity to study cases in detail but are required to assume full responsibility for their patients.

A one thousand bed Army general hospital, according to proposed tables of organization, requires for its proper functioning a quota of fifty-six officers, one warrant officer, one hundred and five nurses and five hundred enlisted men. The officers include thirty-nine Medical Corps officers (physicians), five Dental officers, seven Medical Administrative Corps officers, two chaplains, two Quartermaster officers and one Sanitary Corps officer. These estimates are considerably lower than the figures contained in previous tables of organization, since the danger of seriously depleting the ranks of civilian medical practice is appreciated and has been given careful consideration.

Among the enlisted men allocated to military hospitals for duty, technicians trained in the following fields are necessary: (1) sanitation, (2) x-ray, (3) pharmacy, (4) laboratory, (5) veterinary, (6) dental, (7) med-

ical and (8) surgical. Anticipating the need for technicians, the Army Medical Department kept pace with the military expansion program for Selective Service training prior to our entry in the war. For many months courses have been conducted at our larger military hospitals and at Carlisle Barracks to train enlisted technicians. These men were coming off of the "assembly lines" at the rate of approximately fifteen hundred a month prior to the Japanese assault on Pearl Harbor.

In addition to enlisted technicians, who must meet the physical standards required for general military service, a number of civilian medical technicians are necessary in our permanent Army hospitals, dispensaries and laboratories.

Thus far I have discussed the need for trained hospital personnel such as are employed ordinarily at large military hospitals. With the numerical requirements of a thousand bed general hospital just cited as an example, it is not difficult to visualize the needs of smaller and of larger "fixed" Army hospitals, which receive allotments of personnel on a scale roughly proportionate to the size of the hospital.

MILITARY DISPENSARIES

Trained medical personnel are also needed to staff our Army dispensaries, which provide outpatient service to military personnel not requiring hospital care. Army dispensaries, like hospitals, are classed as "fixed" or "mobile." Fixed general dispensaries are maintained in some of our larger cities where the size of the military population warrants their establishment. Fixed station dispensaries are provided at many small military stations, where there is no hospital, to provide outpatient service. Station dispensaries are also maintained at very large posts to relieve station hospitals of burdensome outpatient service. On some of the larger military reservations where Army units of considerable size are quartered in scattered areas, decentralized dental clinics, each equipped with fifteen or twenty-five chairs, are set up in populous troop areas, thus obviating many long trips to the station hospital or dispensary. Mobile or "unit" dispensaries are provided to serve the nonhospital medical needs of troops in the field. In combat these unit dispensaries are known as "aid stations."

OTHER MILITARY ACTIVITIES REQUIRING
MEDICAL PERSONNEL

Trained medical personnel are also necessary at the headquarters of the nine corps areas, at the headquarters of our overseas departments and at corps area and department laboratories, as well as in the Office of the Surgeon General of the Army and in the Medical Section of the Office of Air Corps. They are needed at the Medical Field Service School and at the four Medical Department replacement training centers at Camp Lee, Va., Camp Grant, Ill., Camp Barkeley, Texas, and Camp Robinson, Ark., to train Medical Department enlisted recruits in the medicomilitary aspects of field service. Trained medical men are needed at the Army Medical School, Dental School and Veterinary School. They are needed at the School of Aviation Medicine and at the Aero-Medical Research Laboratory.

The Supply Division of the Surgeon General's Office in Washington, D. C., and the Army medical supply depots which are located in various parts of our country and overseas require officer personnel with a high degree of technical training in medical supply work. It is necessary that many of these officers be selected from among qualified physicians in order that our medical supply problems may be thoroughly understood by the officers charged with the procurement and distribution of this important material. The need for physicians to engage in medical supply work has been adequately met by a special training program for selected officers of the Regular Army Medical Corps, who have been chosen to administer and maintain this service. These "supply trained" medical men form the nucleus of a medical supply organization which also has need for nonmedical specialists in this field.

AVIATION MEDICAL EXAMINERS AND
FLIGHT SURGEONS

The Army Air Corps is expanding enormously, so the need for aviation medical examiners and flight surgeons has increased correspondingly. To help meet the requirements, the Army School of Aviation Medicine at Randolph Field, Texas, has been conducting courses to qualify physicians as aviation medical examiners. In normal peacetime these courses lasted four months, but, with the need for mass production of pilots incident to military expansion, the courses were shortened to two months. This brief

period of time proved inadequate, and the course has been lengthened to three months. At present more than one hundred medical officers are receiving this training every three months. On graduation they are rated as Aviation Medical Examiners and, after a year of satisfactory service as Examiners, they may qualify as Flight Surgeons.

The Army School of Aviation Medicine was born on Jan. 19, 1918, when the Army Central Medical Research Laboratory began functioning at Mineola, Long Island. The first systematic course for flight surgeons, however, was not given until May 1919. The name of the School for Flight Surgeons was changed to the School of Aviation Medicine on Nov. 8, 1922. The first institution of its kind in the world, the Army School of Aviation Medicine has acquired an enviable record in training flight surgeons and aviation medical examiners, not only for the Army, but for the Navy and for a limited number of medical officers from Latin-American governments. The school was moved several times, but since Oct. 30, 1931 it has been located at Randolph Field, Texas. The Navy established a School of Aviation Medicine about two years ago at Pensacola, Fla.

FIELD MEDICAL SERVICE

To the physician in civil life the need for trained medical personnel to care for the health of the military, which I have thus far outlined, must be readily apparent. But, in addition, large numbers of trained medical personnel, including physicians, dentists, nurses and veterinarians, also are required for other important military medical duties, particularly in the field, and the need for them is not so readily appreciated by those who are unfamiliar with the organization and requirements of military service.

In modern civilian communities the health of the population is cared for by hospitals, practicing physicians and dentists, health departments and numerous permanent sanitary installations. To provide properly for the health of the military, the Army Medical Department utilizes its own military hospitals, dispensaries and laboratories. It practices preventive medicine and engages in large scale activities not only to provide service to the sick and injured but to establish and maintain sanitation in the Army.

Military preventive medicine and sanitation present a problem quite different from

normal maintenance of civilian health. Satisfactory solution of the problem requires trained medical personnel to take over the responsibilities incident to the increased disease hazards occasioned by military life in cantonments and camps and during military operations in the field. These hazards are enormously increased by unfavorable climatic conditions and by exigencies of military service which may for a while take precedence over preservation of health.

There is a need for medical and sanitary inspectors. In large military organizations work of this nature is a full time job, often requiring several assistants. In the smaller units an officer may serve as medical inspector in addition to other Medical Department duties to which he is assigned. He may have had no previous experience at this work, but any physician with satisfactory basic medical education may become an able inspector.

It should be emphasized that, although "fixed" hospitals must be maintained to provide definite treatment for all military personnel requiring such attention, additional military hospital facilities also must be held in readiness and established when necessary to care for the sick and injured soldiers in the combat zone where "fixed" hospitals are not available.

The provision of mobile evacuation hospitals and surgical hospitals to accompany armies in the field, therefore, requires an additional set of medical personnel to staff these hospitals. Since definitive treatment is usually not practicable in these combat zone "mobile" hospitals, beds must be held available also in "fixed" hospitals in the Communications zone of the theater of military operations and in the zone of interior for casualties evacuated from the mobile hospitals in the combat zone.

The mobile evacuation and surgical hospitals receive sick and wounded from the field army areas in which they are temporarily established and from the division medical installations farther forward. The division casualties are concentrated at clearing stations (formerly called field hospitals) by division collecting companies, which receive patients from regimental and battalion aid stations. All the numerous field medical installations require medical personnel in sufficient numbers to meet the

needs of large, small and often widely dispersed tactical units.

When one visualizes the scheme of field medical service, including the chain of evacuation of casualties by the Medical Department from front to rear, and considers the magnitude of this important task of the Medical Department, the need for trained personnel is indeed apparent. Every field unit the size of a battalion or larger must have its complement of medical personnel in sufficient numbers to care for the daily increment of sick and to meet satisfactorily the requirements of at least average battle casualty expectancy. Furthermore, these personnel must be supplemented by additional surgical teams and by replacements when necessary. Experience has shown that medical personnel are by no means immune to illness or to enemy weapons.

NEED FOR ADAPTABLE YOUNG PHYSICIANS

Contrary to the expectations of many professional men who come into military service, the greatest need, numerically, is not for surgeons but for physicians to care for the sick, to conduct countless physical examinations and medical inspections, to supervise sanitation, to give technical advice and to serve in whatever capacity they may be needed, whether or not it is in their special field of training. Sooner or later, as the requirements of the service permit, misplaced round pegs may find their way into round holes, and square pegs, we hope, will be guided into square holes. Qualified surgeons, of course, are needed, including specialists in the various sub-branches of surgery, particularly orthopedists. There is a brisk demand for young neuropsychiatrists, roentgenologists, urologists and physicians trained in laboratory medicine.

In time of war the accent is on youth. There is need for intelligent young medical men who are flexible and adaptable to change. Field medical service calls not only for skill but for stamina and strength. Intervals of comparative idleness will be interrupted by dynamic periods of tremendous activity in which speed, resilience and herculean endurance will be demanded of trained medical personnel serving in the combat zone.

To meet properly the obligation of caring for the health of the military, the Army Medical Department needs the following

professional men for every thousand men in the Army: (1) six and five-tenths physicians, (2) one and five-tenths dentists and (3) seventy-five one-hundredths veterinarian.

One hundred and twenty nurses are allocated for every thousand fixed hospital beds, but nurses are not actually assigned to fixed hospitals in that proportion. Nurses for overhead, dispensaries and mobile hospitals must be drawn from this allocation figure.

Officers of the Medical Administrative Corps of the Regular Army are selected from qualified graduates of four year courses in pharmacy. They must pass a satisfactory professional examination prior to commission. Medical Administrative Corps Reserve officers at present are appointed only from among enlisted men who have satisfactorily completed a course of instruction at the Medical Administrative Officers' Candidate School at Carlisle Barracks, Pa.

SPECIALISTS IN ALLIED MEDICAL FIELD COMPRISE SANITARY CORPS

The Army Medical Department also must have specialists who are not doctors of medicine or dentists or veterinary doctors. Included in this group are chemists, bacteriologists, sanitary engineers, food and nutrition experts, nonmedical public health workers and nonprofessional men experienced in the procurement, storage and distribution of medical equipment and supplies. These men may be commissioned as officers, in rank ranging up to colonel, in the Sanitary Corps of the Medical Department.

Sanitary Corps officers are assigned to appropriate duties in their special fields, such as the supervision of water purification and sewage treatment plants, the planning and management of mosquito control programs, sanitary surveys, nutritional studies and liaison with the Quartermaster Corps. Some act as laboratory officers, while some aid in the procurement of medical supplies or serve in other special Medical Department fields.

PROCUREMENT AND ASSIGNMENT SERVICE

The new Procurement and Assignment Service of the Office of Defense Health and Welfare Services, recently organized in Washington, D. C., should prove to be a valuable agency in coordinating an equitable distribution of physicians, dentists and vet-

erinarians to meet the needs of both the civilian population and the armed services. It will be remembered that the American Medical Association rendered invaluable assistance by distributing questionnaires and classifying the physicians of the United States as to their special qualifications and availability. The Association thus laid the groundwork necessary for the proper functioning of the Procurement and Assignment Service.

Army medical service, in time of war, necessarily will function under severe handicaps that are not encountered in civilian medical practice. Nevertheless a high standard of service must be maintained. Therefore it is anticipated that proportionately greater numbers of trained medical personnel will be needed for the Army than would ordinarily be utilized by a numerically equivalent civilian population.

In conclusion, let us take serious cognizance of the will of the American people to achieve decisive victory in this war. Imbued with a determination to win we can be sure that now, as in previous military conflicts, the people of the United States will insist on adequate care for the health of their soldiers. This can be accomplished only by providing trained personnel in sufficient number to meet the heavy demands of our greatly augmented armed forces.

We are justly proud of the magnificent manner in which American medicine is mobilizing for this war. But an enormous task yet lies ahead. This task will require a rising tide of trained medical personnel to care for the health of the military. The physicians and nurses of 1942 are being called on in ever increasing numbers to rally to the colors for active service with the armed forces. They are expected to respond with determination and courage, as did the splendid medical men and women of 1917.

Bonds or Bondage—"We prefer to maintain the eagle as it is—flying high and striking hard"—so spoke the President on February 23. And this we shall do!

We, like the men in uniform, must share in the fight for the defense of America. This means the giving of professional service to the armed forces and to civilians. It also means that we will enlist our dollars in this battle for freedom. We must buy, and continue to buy, Defense Savings Bonds and Stamps.—*J. M. A. Tennessee, March '42.*

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF LABORATORIES

Samuel R. Damon, Ph.D., Director

SPECIMENS EXAMINED

FEBRUARY 1942

Examinations for diphtheria bacilli and Vincent's	764
Agglutination tests, (typhoid, Brill's, undulant fever)	450
Typhoid cultures (blood, feces and urine) ..	459
Examinations for malaria	611
Examinations for intestinal parasites	2,091
Serologic tests for syphilis (blood and spinal fluid)	38,547
Darkfield examinations	44
Examinations for gonococci	2,108
Examinations for tubercle bacilli	1,467
Examinations for Negri bodies (microscopic)	45
Water examinations (bacteriologic)	740
Milk examinations	1,758
Pneumococcus typing	18
Miscellaneous	616
Total	49,718

ANNUAL REPORT—1941

DIAGNOSTIC DIVISION

More specimens were examined in the Bureau of Laboratories during the calendar year 1941 than ever before during a comparable period. In the table below a comparison of the number of specimens of the different types handled during 1940 and 1941 is presented. Of the total of 660,700 specimens examined during 1941 some 65,609 were left-overs from the wholesale blood-letting on October 16, 1940 of registrants for military service, or were similar specimens taken on these men in the six weeks immediately following Registration Day. However, subtraction of this number of serologic survey specimens from the total still leaves 64,300 more specimens handled in 1941 than in 1940.

TABLE I
A COMPARISON OF THE NUMBER OF SPECIMENS OF THE DIFFERENT TYPES EXAMINED DURING 1940 AND 1941

Kind of Examination	1940	1941	Gain or Loss
Diphtheria	6,718	9,295	+ 2,577
Vincent's infection	1,789	3,640	+ 1,851
Pneumococcus typing ..	564	373	— 191
Enteric organisms	12,375	13,169	+ 794
Agglutination tests	8,694	9,745	+ 1,051

Malaria	26,182	21,527	— 4,655
Intestinal parasites	42,978	50,680	+ 7,702
Tests for syphilis	268,258	391,666	+ 123,408
Gonorrhea	22,629	26,307	+ 3,678
Tuberculosis	19,730	20,525	+ 795
Rabies	713	592	— 121
Water	11,364	11,855	+ 491
Milk	25,699	25,237	— 462
Meningococcus	65	59	— 6
Food poisoning	4	30	+ 26
Research	0	863	+ 863
Miscellaneous	11,683	9,628	— 2,155
Total diagnostic	459,445	595,091	+ 135,646
Registrants, Kahn's	136,955	65,609	— 71,646
Grand Total	596,400	660,700	+ 64,300

Examination of Table I reveals the fact that material losses occurred in the number of specimens handled in the case of pneumococcus typing, malaria smears, brains for Negri bodies, and milk samples. On the other hand appreciably more specimens were submitted for examination for diphtheria, Vincent's infection, enteric group organisms, agglutination tests, intestinal parasites, tuberculosis, water analysis, and for evidence of venereal infection. By far the greatest increase in any single type of specimen occurred in the case of those sent in from cases of suspected venereal disease.

BUREAU OF MATERNAL AND CHILD HEALTH

J. S. Hough, M. D., Acting Director

NUTRITION IN PUBLIC HEALTH

The need to include services in nutrition in public health practice is emphasized in a report of the International Health Division of the Rockefeller Foundation. It is based on the proceedings of a Conference on Methods and Procedures for Nutrition Surveys of Population Groups. All the members of the conference have had special experience in this field. The chairman was Dr. John B. Youmans, and Dr. N. Jolliffe was secretary. Alabama's late State Health Officer, Dr. J. N. Baker was present as an observer.

"Two circumstances in particular have emphasized the place of nutrition in public health practice. These are: (1) the growing recognition of the frequency of mild or early nutritional deficiencies in the general

population, and (2) the development of methods and procedures for detecting them."

Pertinent to the problem is the fact that "no symptoms or physical signs can be accepted as diagnostic of early nutrition failure." Certain symptoms and physical signs, however, when verified by a competent physician and when other possible causes have been ruled out, should be considered as significant indications.

Tentative clinical criteria for the recognition or suspicion of early nutritional failure are given in this table:

SYMPTOMS AND SIGNS SUGGESTIVE OF EARLY DEFICIENCY STATES IN INFANTS AND CHILDREN

Symptoms

1. Lack of appetite
2. Failure to eat adequate breakfast
3. Failure to gain steadily in weight
4. Late period of sitting, standing, walking
5. Aversion to normal play
6. Chronic diarrhea
7. Inability to sit
8. Pain on sitting and standing
9. Poor sleeping habits
10. Backwardness in school
11. Repeated respiratory infections
12. Photophobia
13. Lacrimation

Physical Signs

1. Lack of sub-skin fat
2. Wrinkling of skin on light stroking
3. Poor muscle tone
4. Pallor
5. Rough skin (toad skin)
6. Hemorrhage of newborn (K)
7. Bad posture
8. Nasal blackheads and whiteheads
9. Sores at angles of mouth
10. Rapid heart
11. Red tongue
12. Square head, wrists enlarged, rib beading
13. Vincent's angina, thrush
14. Serious dental abnormalities
15. Corneal and conjunctival changes—slit lamp

DISCRETION IN ADMINISTRATION OF VITAMINS

In no line of human nutrition has more attention been paid in recent years than to the administration of vitamins. The public has become vitamin-conscious through scientific and popular publications concerning the importance of these factors and their function in maintenance of health and promotion of growth. Substantial facts have been exaggerated through exploitation on the part of certain financial interests which have undoubtedly unduly magnified the role of these

elements in human economy. Not only has much been published concerning restoration of health by proper administration of vitamins, but their employment has been advocated for individuals in health in order to maintain a normal state. The indiscriminate administration of vitamins to industrial employes has resulted in such a controversy that the Council on Foods and Nutrition and the Council on Industrial Health of the American Medical Association were requested to make a study of vitamins and present an authoritative report concerning their true dietary function and proper administration.

The report of these Councils should serve to establish the role of these preparations in industry, as well as their usefulness in maintaining and promoting normal nutrition.—*Editorial, Northwest Medicine, March 1942.*

DENTAL HYGIENE

The Division of Dental Hygiene, through its educational program, is attempting to teach the people of Alabama the benefit derived by visiting their dentists periodically. If John Doe would only use the dentistry that is available to him at the proper time, a half of the teeth lost could be saved.

For demonstration purposes, dental clinics for indigent children are operating in eighteen counties: three prior to 1940; eight in 1940; fifteen in 1941; and eighteen so far in 1942.

Six-year-old indigent children are admitted to the clinics the first year. However, if preschool children can be reached they take preference over others. A child's first visit to the dentist should be at the age of two and one-half years. During the second year the children originally admitted continue with their regular appointments every six months, and any new patients admitted must be six years of age in the first grade or preschool children. Children who can pay for dental services are required, because of the educational achievement, to procure the services of a dentist. By this method, in six years, there will be a demonstration group of children in each of the six grades of elementary school, demonstrating the advantages of periodically visiting the dentist.

Tables 1 and 2 show dental clinic activities in counties having dental clinics for the calendar year 1941.

TABLE 1
WHITE CLINICS

		Autauga	Barbour	Calhoun	Chambers	Clay	Coffee	Dallas	DeKalb	Jefferson	Lowndes	Madison	Marengo	Washington	TOTAL
Patients admitted		44	181	73	640	69	11	167	81	250	190	98	196	53	2,053
Patients completed		29	93	126	256	6	2	129	37	179	234	69	169	22	1,351
Visits		72	202	266	524	6	24	255	117	1,002	447	236	286	95	3,532
Amalgam fillings	*P.	54	262	184	189	22	10	184	44	504	475	98	301	74	2,401
	*D.	98	75	256	13	51	24	48	123	470	17	192	746	135	2,248
Porcelain fillings	*P.	0	2	0	3	0	0	2	6	13	33	2	2	0	63
	*D.	0	0	0	0	0	0	0	0	0	0	0	59	0	59
Cement fillings	*P.	0	6	0	105	0	0	35	1	16	0	7	8	0	178
	*D.	0	2	4	332	0	0	2	5	10	1	30	36	0	422
Silver nitrate	*P.	1	4	0	99	0	0	11	0	29	0	8	3	13	168
	*D.	39	1	37	89	0	0	161	41	88	0	30	10	32	528
Extractions	*P.	1	15	2	13	6	0	20	0	55	34	6	0	0	152
	*D.	91	73	155	126	37	10	165	72	255	67	90	109	30	1,280
Patients having teeth cleaned		41	1	38	169	1	9	11	59	43	131	70	176	52	801
Gum treatments		0	10	2	218	0	3	6	2	15	0	4	5	1	266
Miscellaneous treatments		2	5	5	173	36	1	12	3	31	26	0	3	0	297
Cases of Vincent's		0	0	0	0	0	0	12	0	4	0	0	1	0	17
Broken appointments		4	11	27	0	0	5	53	0	154	0	10	105	6	375
Total operations		327	469	683	1,809	153	57	657	356	1,529	784	537	1,458	337	9,156
Total paid clinicians		75.00	235.00	470.00	500.00	80.00	80.00	235.00	300.00	1,007.50	487.50	410.00	445.00	110.00	4,435.00
Cost per operation		.22+	.50+	.68+	.28+	.51+	1.40	.35+	.84+	.65	.62+	.76+	.30	.35+	.48+
Average time per treatment (min.)		6+	12	17+	83	12+	33+	11	20+	15+	-----	18+	10	7+	12+
Number of clinic hours		37	94	192	250	32	32	120¼	120	399½	-----	164	228	40	1,708
Months in operation		3 mo.	-----	12 m.	5 mo.	4 mo.	2 mo.	10 mo.	8 mo.	6 mo.	-----	11 mo.	12 mo.	3 mo.	

*P: Permanent. D: Deciduous.
Cost per child admitted: \$2.06.

TABLE 2
NEGRO CLINICS

		Jefferson	Lee	Macon	Slossfield	TOTAL
Patients admitted		158	188	250	359	955
Patients completed		99	48	78	193	421
Visits		404	174	250	106	934
Amalgam fillings	*P.	113	147	137	169	566
	*D.	115	12	33	5	165
Porcelain fillings	*P.	77	0	14	9	100
	*D.	4	0	3	1	8
Cement fillings	*P.	42	13	0	10	65
	*D.	101	3	9	9	122
Silver nitrate	*P.	31	0	0	21	52
	*D.	89	0	0	53	142
Extractions	*P.	111	6	15	482	614
	*D.	101	1	232	119	453
Patients having teeth cleaned		58	56	16	104	234
Gum treatments		22	11	4	100	137
Miscellaneous treatments		7	2	7	59	75
Cases of Vincent's		6	0	0	0	6
Broken appointments		243	0	2	373	618
Total operations		826	252	450	1,141	2,669
Total paid clinicians		395.00	205.00	315.00	600.00	1,515.00
Cost per operation		47+	81.33	.70	32	56+
Average time per treatment (min.)		14+	29+	25+	-----	20
Number of clinic hours		198	123	189	-----	510

*P: Permanent. D: Deciduous.
Cost per child admitted: \$1.58.

BUREAU OF SANITATION

D. S. Abell, M. S. in S. E., Director

FOOD SANITATION PROBLEMS IN
DEFENSE AREAS*

By

R. C. Burkhardt, B. S.

Madison County Health Department
Huntsville, Alabama

In my opinion the Number One food sanitation problem in defense areas is improper washing and sterilizing of eating and drinking utensils. To a program of all-out defense production, America has dedicated over fifteen billion man-hours. Strikes, shortages, priorities and acts of God may create work stoppages of this program, yet the Number One foe of production is not any of these but plain old-fashioned sniffles and other respiratory ills. Because of them—specifically, colds and influenza—fifty-nine million working days are lost each year. To stop this sabotage and this staggering amount of time lost, especially now when time and man-hours are more important to

*Presented at the 1942 meeting of the Public Health Workers of Alabama, February 10, 1942.

our nation than at any other time, we believe the main avenues of distribution for infective organisms must be blocked. The common drinking glass and eating utensils of food establishments provide such a highway, which can be barricaded by the proper washing and sterilizing of eating utensils.

The influenza epidemics that developed during World War I stimulated one of the first investigations ever made of the possible role of eating utensils as vectors in disease contamination. It still remains the most notable epidemiologic record in this matter. It showed that in army cantonments where eating and drinking utensils were poorly washed the influenza rate was much higher than in comparable groups where drinking utensils were thoroughly sanitized.

With the added task of maintaining sanitary conditions for the 17,000 or more defense workers in Madison County, the County Health Department has more than doubled its effort to see that eating utensils are properly washed and sterilized. Of the 87 cafes now in operation in this area, 16 so far have had to increase their water heating facilities and capacity to assure an adequate quantity of water at 170 degrees temperature. These added water-heating facilities consisted of more heaters or booster heaters being added on to the present heating facilities, or of larger heaters and hot water storage tanks. The ten soda fountains in the county all have automatic water heaters.

We have required all cafes to get and use either a wire basket or a chain and plug, whereby the dishes and glasses can be submerged in the hot water and taken out without scalding the dish-washers' hands. Most of the cafes that use the wire baskets have a gas burner under the rinse sink to keep the water hot so several baskets of dishes can be scalded before the water needs changing. We have two mechanical dish-washers in the county. Even when the best equipment is used, dish washing may not be effective. Even though an establishment has all the modern facilities, if the worker first has not learned how to use that equipment, it is of no practical value; and if the worker does not understand why it should be used in a certain manner, it will not be used.

A second problem is the labor turnover in cafes and getting health examinations of these persons. In the 154 food establish-

ments in Madison County we now have a labor turnover of about 200 new food handlers per month. The inspector never sees a large percentage of these. Also, about half or 100 never take the health examination. Much has been said both pro and con about the examination of food handlers. Many health departments have stopped examining food handlers periodically. The health department in Madison County continues to examine them.

There were 336 food handlers examined for the first nine months of last year. Since that time, or for the past four months, there have been 453 examined; that is, there were 117 more food handlers examined the past four months, or since October 1 when the defense expansion started in Huntsville, than during the preceding nine months. Our records show that during the first nine months of the year eleven food handlers, or 3 1/3%, had positive blood tests. During the past four months 25 food handlers, or 5 1/2%, had positive tests. Of the three other tests made on food handlers, the percentage figures remained about the same; that is, the positives for diphtheria, gonorrhea and tuberculosis before the defense effort and now are about the same. Of the 789 food handlers examined, 4 were positive for diphtheria, 16 for gonorrhea, and one was positive for tuberculosis on x-ray examination. However, Vincent's angina has showed a decrease among food handlers since the defense program started. This decrease was due principally, I believe, to the county going dry, making fewer contaminated drinking glasses available. Another reason may have been better sterilization of food utensils. There has been a 2 1/2% decrease in Vincent's angina among food handlers in the past four months. Of the 789 food handlers examined in the past thirteen months, 7 per cent were affected with Vincent's angina.

A third food sanitation problem is education of food handlers. This training of food handlers is hard to do effectively during normal times, let alone trying to do it in defense areas. This task is difficult because of (1) the labor turnover, (2) the low standard of intelligence, (3) low salaries and long hours, and (4) the employees' lack of interest in their work. This is especially true in a defense area where a large percentage go

to work in food establishments knowing that they will only be there a few days or until they get work at the defense project or elsewhere. It is not uncommon to find half or more of the employees in a food establishment absent from work one day and returning the next day. The employer is usually glad to get them back, even if they are inefficient and did leave him high and dry the day before.

We have found that in the Huntsville defense area more frequent visits and inspections are necessary. Those cafes which are affected most by the defense project are inspected or visited one or more times per week. These visits are made especially during the dish-washing hours, to try to show and see that the dishes are properly washed, sterilized, and not recontaminated. In other words, it is better to show food handlers correct methods while they are in the act than later. The cafe inspection is usually made at some time other than the rush hour when more time can be spent by the inspector in indicating to the management and workers where they have failed.

In nearly all food programs there is usually a little teaching done by closing an establishment or by legal action. This is especially necessary in defense areas where overcrowded conditions exist and some food establishments are none too cooperative. Since the defense program started in Huntsville, 12 cafes have been closed by the health department. Four of these 12 cafes have been closed two or more times. The food permits of two cafes have been revoked permanently.

A fourth food sanitation problem is inadequate food handling facilities. Besides the water-heating facilities which usually have to be increased, there are a number of other things that usually have to be added, increased, or rearranged. Larger dish-washing sinks have been necessary, more kitchen table or working table space, more or larger refrigerating equipment, more storage space, more uniforms, aprons and towels. More pie cases and food covers have been added and perhaps this summer better ventilation or more exhaust fans will be required. And last, but not least, there should be ample dishes and storage space so they can be adequately washed, sterilized and stored to prevent recontamination.

A fifth food sanitation problem is juke boxes and prostitutes; that is, half-drunk customers, both colored and white, dancing, spitting, coughing, and vomiting in food establishments. This practice is particularly bad in defense areas where alcoholic drinks are sold legally. This practice has been practically stopped in food establishments in Madison County by revoking and not again issuing a food permit to such operators, or by not allowing any girl employees to work in such food establishments.

A sixth food sanitation problem in many defense areas is the large number of food establishments going into business, and the frequent changes in ownership or management of these cafes. This, however, is not the case in the Huntsville defense area. It is rather surprising that we have one less food establishment now in Madison County than we had before the defense program started. It is gratifying to say that in no case has a food establishment opened without first getting a permit from the health department. However, the health department has spent a great deal of time answering inquiries, taking applications, and inspecting proposed locations for food establishments. The majority of these applicants did not go into business, the main reason usually being that the building was not suitable for a food establishment without some alteration or repair.

A seventh food sanitation problem is now being felt, but it will get much more acute as the defense program expands. That is the lack of trained inspectors. The war has necessitated the making of minor exceptions to some regulations. I have reference to those conditions which are more or less temporary. These are times when new-to-the-line inspectors should not just use regulations but good judgment too. If there is a crack in a wall or floor, and all the other important items are all right, I'd let them fix that up later. I remember my mother used to say: "I want you to be as good as you can. I don't expect you to be perfect. If you were perfect, it wouldn't be you." Dr. Brooks says a suit of clothes is supposed to have a complete outfit of buttons but I'll wear one any time with a button or two missing before I'll go without any. The buttons—they're all needed more or less but some are relatively more important than others. You

take a suspender button, for instance. Anyway, I don't know of any set of regulations that is so perfect that it doesn't require some judgment and discretion to apply them. It's always safer to have enough slack in the tow-rope to keep the wheels on the ground.

CURRENT STATISTICS
*PREVALENCE OF COMMUNICABLE
DISEASES IN ALABAMA
1942

	Jan.	Feb.	Estimated Expectancy Feb.
Typhoid	10	3	10
Typhus	37	21	10
Malaria	92	49	55
Smallpox	1	3	3
Measles	216	550	917
Scarlet fever	152	91	76
Whooping cough	56	77	121
Diphtheria	68	37	67
Influenza	1676	2472	3421
Mumps	120	205	155
Poliomyelitis	5	1	3
Encephalitis	2	0	1
Chickenpox	220	268	206
Tetanus	0	0	3
Tuberculosis	283	183	247
Pellagra	8	9	13
Meningitis	9	5	9
Pneumonia	585	666	605
Syphilis	968	1089	1036
Chancroid	21	18	6
Gonorrhea	382	483	248
Ophthalmia neonatorum	2	2	0
Trachoma	0	0	0
Tularemia	1	3	2
Undulant fever	1	1	2
Dengue	0	0	0
Amebic dysentery	0	0	0
Cancer	244	148	0
Rabies—Human cases	0	0	0
Positive animal heads ...	14	19	

*As reported by physicians and including deaths not reported as cases.
The Estimated Expectancy represents the median incidence of the past nine years.

Woman's Auxiliary

Mrs. F. C. Smith, Chairman
Press and Publicity Committee

The annnal meeting of the Auxiliary will be held at the Jefferson Davis Hotel in Montgomery April 21-22 and interesting programs have been planned. The President, Mrs. J. R. Horn, says that all visiting doctors' wives who are not members of an Auxiliary are cordially invited to attend all meetings.

* * *

The Calhoun County Medical Auxiliary is very war-minded with Fort McClellan near by. Most of the members have taken first aid courses and some are in the Motor Corps. Others are taking nurses' aid and home nursing and teaching classes in that work. Some are attending lectures to be-

come a Grey Lady. This includes cheering up, writing letters for, entertaining and reading to the soldiers in the convalescent wards at the Red Cross Hut. The Auxiliary has purchased a \$70.00 automatic record player for the boys in the convalescent ward at Fort McClellan and each member has given a record. They have sponsored the prenatal clinic, given a barbecue in honor of the doctors of Calhoun County, and have contributed to all the outstanding causes sponsored by the State and National Auxiliaries.

* * *

The Bessemer Auxiliary enjoyed a luncheon meeting in March, with Mrs. M. C. Ragsdale, Jr., and Mrs. H. V. Springer as hostesses. Mrs. C. A. Harris presided at the business meeting and plans were made for the public relations meeting in April. A contribution to the loan closet, a local health project, was made and plans to secure other donations were made. Mrs. G. W. Williamson read an interesting paper on Jane Todd Crawford.

* * *

A few more months and the members of the Woman's Auxiliary to the American Medical Association will be arriving in Atlantic City, New Jersey, for their annual convention, June 8-12.

Have you made your reservations? If not, send your request at once to Haddon Hall, Atlantic City, New Jersey.

Book Abstracts and Reviews

Synopsis of Genitourinary Diseases. By Austin I. Dodson, M. D., F. A. C. S. Professor of Genitourinary Surgery, Medical College of Virginia; Genitourinary Surgeon to The Hospital Division, Medical College of Virginia; Genitourinary Surgeon to Crippled Children's Hospital; Urologist to St. Elizabeth's Hospital; Urologist to St. Luke's Hospital and McGuire Clinic. Third edition. Cloth. Price, \$3.50. Pp. 302 with 112 illustrations. St. Louis: The C. V. Mosby Company, 1941.

This volume is a small handbook on genitourinary diseases designed for the student of medicine and as a handy reference for the general practitioner.

Nowhere in the book are there any details of the complicated operations for genitourinary diseases. However, the diagnosis and the management of genitourinary diseases from the general practitioner's standpoint are very well presented.

This book opens with a discussion of the procedures necessary for a urologic diagnosis. The instruments such as bougies and sounds are discussed as to their need and use. There follows a description of the anatomy of the male and female urogenital tract and a discussion of many of the

diseases and conditions found in the genitourinary tract.

It is an excellent and concise reference book for the busy physician in general practice who treats patients with genitourinary diseases.

W. H. Y. S.

The 1941 Year Book of Obstetrics and Gynecology. Edited by Joseph Bolivar DeLee, A. M., M. D. Professor of Obstetrics, University of Chicago Medical School; Chief of Obstetrics, Chicago Lying-In Hospital and Dispensary in Affiliation with the University of Chicago; and Jacob Pearl Greenhill, B. S., M. D., F. A. C. S. Professor of Obstetrics and Gynecology, Loyola University Medical School, Chicago; Professor of Gynecology, Cook County Graduate School of Medicine; Attending Gynecologist, Cook County Hospital. Cloth. Price, \$3.00. Pp. 704. Chicago: The Year Book Publishers, Inc., 1942.

The 1941 Year Book of Obstetrics and Gynecology is a veritable mine of information for any physician interested in obstetrics and gynecology. The witty and timely comments of the editors, coming from their wealth of experience, make the four hundred and fifty articles very valuable. These articles represent the latest and most outstanding developments in all phases of obstetrics and gynecology ranging from etiology to treatment. The Year Book is divided into general sections with a complete subject and author index which make it a ready reference book. Attention should be called to the articles on pregnancy tests, abortions, sterility, and present status of stilbestrol. The illustrations are well chosen. One cannot spend time to any better advantage, even in these busy days, than to browse through its covers frequently, for short intervals.

E. F. D.

Neuroanatomy. By Fred A. Mettler, A. M., M. D., Ph.D. Professor of Anatomy, University of Georgia School of Medicine, Augusta, Georgia. Cloth. Price, \$7.50. Pp. 476, illustrated. St. Louis: The C. V. Mosby Company, 1942.

Dr. Mettler has written a very scholarly textbook on neuroanatomy for the medical student. From the tremendous amount of material in the form of microscopic sections, erosion specimens and dissections available in the Department of Neurology, College of Physicians and Surgeons, Columbia University, he has been able to illustrate his book with a remarkably good collection of photographs, drawings, diagrams and cross-sections. In learning a subject as complicated as the human nervous system these illustrations are extremely important in creating visual pictures in the minds of the students. Most of the drawings are original and the artist deserves much of the credit for the success of this book.

The first part of the book deals with the gross anatomy of the brain and spinal cord and their coverings, the cranial and spinal nerves with details as to their origin and distribution. The second half of the book deals with microscopic anatomy of the brain and cord with emphasis on the various nuclei, tracts and connections.

This book should rank high as a textbook of neuroanatomy.

C. K. W.

Psychiatric Social Work. By Lois Meredith French, Director, Study of Trends, American Association of Psy-

chiatric Social Workers; Psychiatric Social Worker and Instructor in Mental Hygiene, New Jersey State Teachers College at Newark. Cloth. Price, \$2.25. Pp. 344. New York: The Commonwealth Fund, 1940.

This book represents a systematic study of psychiatric social work. Miss French outlines the history, development, educational standards, functions, and philosophy in this specialized field.

Psychiatric social work began through efforts to help patients discharged from mental hospitals. As far back as 1860, this problem was recognized in the United States. Great impetus was given to the important subject of aftercare by Adolph Meyer who established an outpatient department in 1906. This was a really great contribution in psychiatric treatment and today all state hospitals maintain a social service department to aid in their rehabilitation program. The demand for psychiatric social workers in World War I amply demonstrated the value of their contribution in the treatment of mental illness. In the years following that war many child guidance clinics were opened with the trained worker taking an important part.

Miss French clearly presents the responsibility of the psychiatric social worker. To quote: "First, she analyzes the patient's social intention in relation to his present difficulty; such analysis is based upon a study of conditions in his home, family, and neighborhood, and his attitude toward them, and is utilized, with the psychiatric, physical, and psychological findings, in diagnosis and treatment. Second, she interprets to the family the patient's problem and the recommendations made by the psychiatrist, always keeping in close touch with changing conditions in the home and family life which may cause an adaptation in plans. Third, she aids the patient and family to work out a program for a more adequate social adjustment, working closely with the psychiatrist as treatment progresses. And, last, she interprets the diagnosis and plans for treatment to her co-workers or to members of other social agencies who may also be interested in the client and family. She may also share in the educational program of the hospital or clinic."

Miss French's study is a valuable contribution in a field dealing with social problems. This volume is of importance not only to every psychiatric social worker and visiting teacher but also to executives and board members of various social agencies, to social workers who are interested in the mental hygiene aspects of their work, and to others who are concerned with this field.

A. M. G.

A Primer on the Prevention of Deformity in Childhood. By Richard Beverly Raney, B. A., M. D. Associate in Orthopedic Surgery, Duke University School of Medicine, Durham, N. C.; Attending Orthopedic Surgeon, Watts Hospital, Durham, N. C.; In Collaboration with Alfred Rives Shands, Jr., B. A., M. D. Medical Director, Alfred I. duPont Institute of The Nemours Foundation, Wilmington, Delaware; Visiting Professor of Orthopedic Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania. Illustrated by Jack Wilson. Cloth. Price, \$1.00. Pp. 188. Elyria, Ohio: The National Society for Crippled Children, Inc., 1941.

This little primer on the prevention of deformities in children was published under the authorization of the Professional Advisory Committee of the National Society for Crippled Children. Its

purpose is to describe to those who come in contact with crippled children the nature of the crippling process, the purposes underlying the various types of orthopedic treatment, and the advantages to be gained by the correct treatment, which is necessary if good results are to be expected. Written in simple language, free from technicalities, it succeeds in making a complicated subject easily understood even by the lay reader. The drawings, which are exceptionally clear, contribute much to the success of the book. The authors explain the nature of the damage done by birth trauma, chronic arthritis, poliomyelitis, fractures and nerve injuries and outline the common methods used to prevent the deformities following these injuries. The book is not intended for the orthopedic surgeon but rather for the lay person who encounters crippled children—social workers, parents and public health nurses. General practitioners will find the book extremely practical.

C. K. W.

Synopsis of Allergy. By Harry L. Alexander, A. B., M. D. Professor of Clinical Medicine, Washington University School of Medicine, St. Louis; Editor of the *Journal of Allergy*. Cloth. Price, \$3.00. Pp. 246, illustrated. St. Louis: The C. V. Mosby Company, 1941.

Anyone familiar with the clear thinking and concise discussions of which Harry Alexander is capable will be disappointed to find that the author has written a brief synopsis rather than a more detailed textbook. Alexander is one of the outstanding clinical allergists in the country and his opinion on subjects in the field of allergy is respected by all of his colleagues. In writing this synopsis, the author has shown the same precision in thinking, the same ability to grasp the essentials of a subject, and the rare capacity to stimulate thinking on the part of his listeners that have won the respect of all those who have had the pleasure of hearing him talk on this subject. These characteristics make his synopsis somewhat superior to most of the other manuals dealing with the same subject.

With a healthy attitude of doubt as to the value of the skin test, the author emphasizes the importance of the allergic contacts of the patient and relies more on their removal than on specific desensitization in his attempt to obtain relief. He emphasizes the fact that frequent attacks of asthma do more premanent damage to the patient than do frequent doses of adrenalin. This fact, well known to allergists, is not appreciated by most physicians who lack special interest in this subject.

Alexander's description of intrinsic asthma is classical. He has done much original work on chronic emphysema.

The chapter on hay-fever is very concise but gives no data as to the important factors in the various localities of the country. Other chapters deal with such atopic manifestations as migraine, urticaria, eczema, purpura and gastro-intestinal allergy. There is a very practical table showing the symptoms of drug intolerance as contrasted with those of drug allergy.

As a source of information for patients with asthma and as an introduction to the subject, the

synopsis is of great value. Those of us who know and respect Dr. Alexander would prefer a larger and more scholarly work from the same pen.

C. K. W.

Nutrition in Health and Disease. By Lenna F. Cooper, B. S., M. A.; Edith M. Barber, B. S., M. S.; and Helen S. Mitchell, B. A., Ph.D. Eighth edition, revised and reset. Cloth. Price, \$3.50. Pp. 709. Philadelphia: J. B. Lippincott Company, 1941.

This book is intended for nurses, teachers of nurses, dietitians, homemakers, and others interested in the science of nutrition. Anyone whose responsibilities include planning meals, buying and preparing food will profit by its use.

The public health nurse who is constantly encouraging improvement in food habits will find Part Three, Feeding of Mother and Child, and Part Four, Nutrition and Health Service, particularly helpful.

The chapter on Recommended Dietary Allowances, as set up by the Committee on Foods and Nutrition of the National Research Council and intended to serve as a guide for planning adequate diets, represents the opinion of leading food scientists of the country. Other valuable features of this revised edition are the food tables and other scientific information included in Part Seven.

More practical suggestions might have been offered in a few instances, and it may appear a little sketchy in some parts, but it appears to be one of the best textbooks available for nurses. It should be familiar to nutritionists, public health officers, public health nurses, and others interested in the latest findings of nutrition.

A. T.

Synopsis of Diseases of the Heart and Arteries. By George R. Herrmann, M. S., M. D., Ph.D., F. A. C. P. Professor of Medicine, University of Texas; Director of the Cardiovascular Service, John Sealy Hospital; Consultant in Vascular Diseases, U. S. Marine Hospital. Cloth. Price, \$5.00. Pp. 468. St. Louis: The C. V. Mosby Company. Second Edition, 1941.

The Mosby Company has published a whole series of synopses dealing with various phases of the practice of medicine. This one is actually a textbook and can be used even for reference work. It is a synopsis only in that it is condensed into a comparatively small volume by the elimination of theory and controversial discussions. It must be obvious to anyone who reads the book that its author is one of those exceptional men who really knows how to teach. The reviewer particularly recommends the section on electrocardiography because in a few pages the author has presented enough of the subject to make it clear to a new student or a practitioner. The clinical discussion of various types of heart diseases and the therapeutic measures used in their treatment is handled with unusual clarity.

C. K. W.

<p>ANNUAL MEETING MONTGOMERY APRIL 21-22-23</p>

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VICTORY SHALL BE OURS*

By

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Dr. J. T. Finney, in his late autobiography, tells a story of a visit he made to Nashville and the old Jackson homestead, The Hermitage. During his stay, there was a party of visitors inspecting the house and grounds. Among them was a man, evidently a Northerner, who was greatly impressed by the manner and language of the darky who was acting as their guide around the premises. The darky posed as Andrew Jackson's body servant, but a glance at him and at the calendar rendered his assertion a bit doubtful, although he put up a good bluff. He laid great emphasis on the traditional characteristics of President Jackson, mainly his fondness for having his own way and the turbulent character of his life.

When we had reached President Jackson's grave, the gentleman very respectfully took off his hat, and standing uncovered beside the grave remarked, "Well, I suppose the old General is at peace in Heaven at last."

At which the darky spoke up very quickly and said, "'Deed, boss, I don't know wether de ol' Gen'ral am in Heav'n or no; but one t'ing I sho' does know, ef he done make up his min' to go dar, he dar!"

Determination is one of the great qualities which leads to achievement. Combine it with *preparedness* and few things are impossible. That goes for our ultimate victory in this war. We must possess these qualities in increasing abundance as we go forth

*Presented before the annual conference of the Public Health Workers of Alabama, Montgomery, February 9, 1942.

to the tasks ahead. We did not wish this war but now that we find ourselves in the midst of it, we shall not be found wanting in the stuff which it takes to win the war. There is hardly anyone who has not had to readjust his life to conform to the pattern which the present conflict has imposed and we can expect even more drastic revisions and sacrifices in the months to come. But that is not really important if we stop and take a broad view of the picture. What really counts is putting to productive use every single minute. We *could* even lose this war and with it our priceless liberties, freedom, and institutions, if we allow ourselves to tolerate indifference, waste, apathy and complacency. This, we do not intend to do, however. We shall outproduce the Axis in every way, realizing that the faster we produce and put to intelligent use the essential weapons of war, the quicker will come victory. We shall work and fight to whatever extent is necessary, each person doing the job he is best equipped to do, to assure the preservation of our democratic way of life. I say "we" because I know we are all of one mind on this issue. We must be ready for any eventuality and be prepared to take the *offensive* as well as the *defensive*.

I heard a little story about an army drill sergeant the other day. He had a number of recruits to drill and wanted the married men separated from the single ones, so he formed them in line and gave the command: "Single men advance; and married men fall back to the rear." All took their places except one, an Irishman who stood still. The sergeant asked the reason why he had not moved but no answer came from Pat. "Come, my man, are you married?"

"No," replied Pat.

"Then, are you single?"

"No."

"Then what are you?" demanded the sergeant.

"I'm courting Sally," was the quick and emphatic reply.

I hope when we are called upon to render a service, we shall not be faced with any uncertainty as to our rightful responsibility and shall be ready. Total defense presents tremendous problems which we can hope to solve only through intelligent cooperation and careful planning; and military strength, we must not forget, depends upon civilian strength and morale. So let's not lose sight of the fact that the job back home may be just as important to the cause of national defense as any assignment to the battlefield.

Whether referring to defense activity of military significance, or to the perhaps less exciting daily routine of duty back home, it is worth noting that preparedness has become a national watchword in every sector and certainly it is a very important one for every profession, group or individual.

To carry out our program of public health preparedness, continuous personnel training has become the order of the day. This is being met in various ways, not the least effective of which is the conference or annual meeting, such as this one, where workers come together to study and profit by the experiences of others, interchange opinions and ask counsel to smooth the way toward specific objectives and accomplishments. Then, there are the special scholarships, institutes, and other measures which have had an important influence in increasing the number of competent and well-trained health workers to meet the new and exacting demands of today's public health program. This has meant much for public health preparedness.

Without doubt, the provisions of the Social Security Act have given more impetus to improvements in personnel training for public health than perhaps any other one factor in recent years. This is an encouraging trend, and I would especially like to comment on the merit system of personnel selection which it proposes for all states administering any phase of the Social Security program. This step is certain to contribute helpfully to better quality of service, to economy in government, and to the security of public health workers everywhere who comply with its requirements.

Just a word about this merit system: We know that its proposal came about primarily to insure that federal funds appropriated for

health work and other purposes would not be used wastefully as a result of the possibility of incompetent personnel trying to execute the important duties incident to a health program. This is simply good business and gives the average citizen a sense of feeling that his government is utilizing public funds to his best interests. Each state, of course, is free to work out its own plan of civil service, subject to final approval by the federal agency.

A number of states have had civil service for several years. Some of their civil service programs have operated satisfactorily and some have not. Those operating under civil service, however, have felt that, by and large, they were better off with it than without it.

Up to January 1, 1940, in addition to those states having civil service, some states had developed in part merit systems of their own. In Mississippi we have a merit system applying to clerical and sanitation workers which was initiated in 1935. A number of other states had similar systems in non-professional or semi-professional classes. Professional classes were employed on the basis of previous training and experience and because of frequent political interference these positions often were filled by unqualified people.

Still other states did not have any kind of personnel administration system. Due to all of these varying situations, the Federal Government, in apportioning money to the states according to law, felt that some control should be exercised over qualifications and fitness for employment in positions which Social Security funds help to support.

In discussing the merit system, I think I would present a biased view unless I mentioned possible disadvantages and pitfalls which it entails. The most common charge against civil service as it exists today is that it is bureaucratic, slow, and weighed down with technicalities. Complainants say the personal element is lacking in services, bound and gagged with limitations on originality and initiative. It is possible for these same drawbacks to exist with regard to merit systems. Another disadvantage is that too often information is the criterion by which a professional member is selected rather than leadership plus information. In other words, it is hard to measure by exam-

inations intangible qualities which make for successful administration of public health activities. Yet to execute ably an effective program of preventive medicine, a person of initiative, resource and enterprise is required.

A further handicap may be found in the security of office afforded by the merit system. Unless carefully watched, this desirable quality of the system may prove a boomerang which robs employees of ambition. To have an alert personnel turned into individuals with a low level of interest and enthusiasm would be highly undesirable. A number of state health departments operating under civil service, however, have found that this unfortunate situation may be prevented. Periodic appraisals of health department services are an excellent means of keeping health department personnel on their tiptoes and constantly aware of their opportunities for improvement. Moreover, a program of staff education, including scholarships and frequent conferences of local and outside nature, helps to maintain high interest in improving performance.

As suggested at first, two major reasons exist for the merit system for public health personnel. Obviously the first one is to free our profession of politics. But the second and most important is to give the profession the highest type of personnel obtainable and to attract to its ranks some of the best individuals which medical, nursing and other professions have to offer. Better public recognition will naturally follow in the wake of higher professional standards.

From this point on, the advantages of the merit system begin to pyramid. To show the benefits accruing from it I could go on and on like the story school children read in the early grades. Remember? It starts like this: "For want of a nail the shoe was lost." In the end the nation was lost, "all for the want of a two-penny nail." While the cumulative effects of this story are negative, it shows the importance of one link in a chain of others.

The cumulative results of the merit system will be positive. We who have had public health interest at heart for years know that the more qualified the personnel, the better the job; the better the job, the more disease prevented; the more disease prevented, the healthier the people; the healthier the people, the longer, happier,

and more useful their lives; and the more useful their lives, the more they can contribute to America's defense effort in this uneasy hour. Truly the merit system is motivated by the highest of principles!

Frankly, I have few fears about the shortcomings of the merit system. They are, I feel, of secondary importance to the major gains and improvements which may be brought about. Also, I believe that with study and planning, they can be overcome. Doctor Charles F. Blankenship, of the U. S. Public Health Service, recently said:

"Despite the fact that the performance of health departments in general is excellent with regard to selection of personnel, their records in assurance for professional growth and maintenance of status for competent workers have been rather poor. *The opportunity now exists for developing a real career service for health workers.*"

On the whole, the future predicts that there can be no letting up of continuous public health training, regardless of how far one may have advanced in any given phase of it. The manifold complexities of modern-day living demand broad expansion of public health services. This, we must be prepared to meet. By taking advantage of the many opportunities for study and learning and self-improvement presented each and every day, there shall be a much easier approach to the public health problems ahead of us.

Sulfathiazole Renal Damage—The diagnosis of renal damage is not difficult if the patient has been properly studied before and during treatment with sulfathiazole. The appearance of hematuria, oliguria, backache, renal colic, tenderness over one or both kidneys, progressive nephromegaly, decreasing renal function and azotemia in a patient who is receiving sulfathiazole should make one suspect renal damage. Rarely do all of these findings exist simultaneously. The presence of one of the findings alone or any combination of them is sufficient for a tentative diagnosis. Cystoscopic examination will usually establish the diagnosis. Crystalluria (sulfathiazole) may aid in establishing a diagnosis, but the mere presence of crystals in the urine does not indicate renal injury. Furthermore, it should be remembered that renal damage will occur when the previous doses were small or the blood level low. If the renal state is carefully studied and an estimate of renal function made before treatment is started, and renal function is religiously observed from day to day, renal damage can be detected very early.—*Burch and Winsor—New Orleans M. & S. J., April '42.*

A STUDY OF MENINGOCOCCUS TOXIN

By
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For many years it was believed that the meningococcus organism did not elaborate an extracellular or soluble toxin. However, in 1931, Ferry and his associates¹ observed that by growing the organism in a special medium, and under controlled conditions, it could be made to produce a soluble toxin, as it apparently does in vivo in the natural course of the disease. Production of an antitoxin followed, and in 1932 its use on experimental animals was reported.^{2, 3, 4, 5} Hoyne,^{6, 7} in 1933, first reported his clinical experience with the antitoxin. Ferry and Steele,⁸ in March 1935, first reported the use of meningococcus toxin in active immunization. Not long after the commercial release of meningococcus antitoxin (Jan. 3, 1935), I began its use in the Isolation Division of the Louisville City Hospital. In an effort to correlate the immunologic observation of Ferry and Kuhns with the disease itself, the late Dr. T. Cook Smith initiated this investigation, which I carried on after his untimely death.

The purpose of the investigation was to evaluate the meningococcus toxin skin test as an index of immunity to the disease, as well as to determine its value as an antigen in the production of active immunity.

1. Ferry, N. S.; Norton, J. F., and Steele, A. H.: Studies of Properties of Bouillon Filtrates of Meningococcus: Production of Soluble Toxin, J. Immunol. 21: 293-312 (Oct.) 1931.
2. Ferry, N. S.: Meningococcus Antitoxin; Prophylactic and Therapeutic Tests on Guinea Pigs, J. Immunol. 23: 315-324 (Oct.) 1932.
3. Ferry, N. S.: Meningococcus Antitoxin; Therapeutic Tests on Monkeys, J. Immunol. 23: 325-347 (Oct.) 1932.
4. Ferry, N. S.: Meningococcus Toxin and Antitoxin; Further Tests on Monkeys, J. Immunol. 26: 133-141 (Feb.) 1934.
5. Ferry, N. S., and Schornack, P. J.: Meningococcus Toxin and Antitoxin; Further Tests on Guinea Pigs and Rabbits, J. Immunol. 26: 143-160 (Feb.) 1934.
6. Hoyne, A. L.: Meningococcus Meningitis; New Form of Therapy, J. A. M. A. 104: 980-983 (March 23) 1935.
7. Hoyne, A. L.: Meningococcia (Meningococcal Infection); New Remedy, Arch. Pediat. 52: 418-421 (June) 1935.
8. Ferry, N. S., and Steele, A. H.: Active Immunization with Meningococcus Toxin, J. A. M. A. 104: 983-984 (March 23) 1935.

PROCEDURE

Throughout the entire study I used the toxin produced in Dr. Ferry's laboratory and supplied by him. At the outset it was found that the most suitable dilution of the toxin as a diagnostic agent was 1-400. However, during the investigation, Dr. Ferry released a more highly purified toxin that gave a more clearly defined reaction. It was found that a 1-800 dilution of this newer material was comparable to a 1-400 of the old. This relationship was established by skin testing a small group of patients with various dilutions of both lots of toxin. (Table 1)

TABLE 1
TESTS WITH VARIOUS DILUTIONS OF THE THREE LOTS OF TOXIN

R. B.	1/100	20x17	28x23	-----
	1/200	30x21	38x25	-----
	1/400	38x28	28x24	-----
	1/800	30x17	30x26	-----
	1/200	-----	15x15	30x20
	1/400	-----	18x24	22x20
	1/800	-----	20x26	30x24
	1/1600	-----	25x30	30x16
	1/3200	-----	22x18	16x12
J. S.	1/100	40x28	36x26	-----
	1/200	36x25	38x28	-----
	1/400	36x27	42x40	-----
	1/800	30x23	40x32	-----
	1/200	-----	35x30	40x30
	1/400	-----	25x20	22x25
	1/800	-----	30x25	35x20
	1/1600	-----	30x25	30x20
	1/3200	-----	12x16	neg
V. N.	1/100	32x26	32x38	-----
	1/200	24x20	32x26	-----
	1/400	21x12	35x23	-----
	1/800	20x12	26x18	-----
N. W.	1/100	15x12	12x12	-----
	1/200	27x21	25x18	-----
	1/400	25x20	30x20	-----
	1/800	25x16	25x20	-----

Since others had shown that control tests done with broth media rarely gave positive reactions, I felt it unnecessary to inconvenience patients with the additional test. In the beginning, however, in order to fully familiarize myself with the toxin skin reaction, I ran a series of tests using heated toxin as a control. This preliminary work led to some interesting conclusions. I was able to verify the observation of Ferry and Steele⁸ that meningococcus toxin is quite stable to heat—the potency being only slightly reduced after autoclaving 40 min-

TABLE 2
TABLE OF ALL TESTS

		14-6m		6m-5y		6y-10y		11y-20y		21y-30y		31y-40y		40y or over	
W.	M	1	11	9	9	33	73	51	81	11	17	6	9	14	16
	F	7	11	11	18	43	48	84	116	28	47	5	9	6	9
		8	22	20	27	76	121	135	197	39	64	11	18	20	25
		+	-	+	-	+	-	+	-	+	-	+	-	+	-
C.	M	4	13	3	1	5	4	0	2	2	6	0	9	5	12
	F	9	15	5	3	1	1	6	6	6	6	3	6	1	0
		13	28	8	4	6	5	6	8	8	12	3	15	6	12
		21	50	28	91	82	126	141	205	47	76	14	33	26	57
		29.5%		47.5%		39.4%		43.7%		38.1%		30.8%		41.2%	

Total number of tests	917
Positive reactors	39.1%
Positive reactors—white	39.4%
Positive reactors—colored	37.3%
Positive reactors—male	35.4%
Positive reactors—female	42.2%

utes at 20 pounds pressure. Kuhns⁹ found, however, that heated meningococcus filtrates produced no reaction.

The diluted toxin was given in 0.1 cc. doses intradermally into the flexor surface of the forearm and a reading taken in twenty-four hours. With the old toxin any reaction 10 millimeters or more was considered positive; with the more purified toxin both the size and intensity were considered. After some experience there was little difficulty in reading the tests, although in every case the reaction was read and recorded in millimeters. A reading was made in twenty-four hours and all were made by the same person. It was found that at the end of 48 hours the area of erythema had faded, and that the tests were inaccurate if read late.

GENERAL COMMENTS

The skin tests were done on individuals of all ages, both colored and white. (Table 2) Certain general conclusions can be reached by referring to the general table.

9. Kuhns, D. M.: Control of Meningococcic Meningitis Epidemics by Active Immunization with Meningococcus Soluble Toxin: Preliminary Report, J. A. M. A. 107: 5-11 (July 4) 1936.

First, there was a slightly higher percentage of positive reactors among whites than among colored, and, while the percentage difference is within the range of experimental error, it indicates a fact recognized by the clinician: that the negro is less susceptible than whites. The percentage difference between the two sexes is more striking and is borne out in the clinical incidence of the disease.

I thought that it might shed some light on the toxin reaction to skin test all patients who had been in the Louisville City Hospital with meningococcic meningitis within the past ten years. Cards were mailed, asking the former patients and their families to report for skin tests. Twenty-five former patients and 87 contacts, either members of immediate families or others in close association with them, responded. Table 3 shows the results of these tests. Contrary to what was expected, the patients and their families, or contacts, gave a much higher percentage of positive reactions than was found generally. The charts of the patients were reviewed but showed no significant difference between the positive and negative reactors as to kind, amount of treatment, or lapse of time between onset and institution of therapy. It might be related here that four patients who had received 100,000 units of antitoxin less than two weeks before testing gave negative reactions. One other patient who had been treated with sulfanilamide alone gave a

TABLE 3
CONTACTS AND PATIENTS

1d-5y		6y-10y		11y-15y		16y-20y		21y-25y		26y-30y		31y-35y		36y-40y		41y-45y		46y-over
2	0	1	2	3	0	0	2	2	3	4	2	0	0	0	2	2	5	
1	0	1	2	4	0	0	1	0	3	2	1	0	0	0	0	0	0	
2	0	1	1	4	2	4	0	4	4	4	4	1	2	3	1	8	3	
1	0	2	1	3	1	0	0	0	0	0	0	0	0	0	0	1	1	
4	2	0	2	3	7	2	4	2	6	7	8	6	1	2	3	10	8	
6	0	5	6	14	3	4	3	6	10	10	7	1	2	3	3	11	9	

Contacts in upper left; patients in lower right.

103 patients and contacts tested
58.2% patients and contacts positive
57.7% patients positive
68.1% contacts positive
50.0% contacts remained positive after immunization
33.3% patients remained positive after immunization

positive reaction to the same dilution of toxin.

It can be seen from the above that the degree of toxin immunity following active immunization was apparently greater than the immunity to toxin developed during the course of the disease or by contacts who did contract infection, as determined by the toxin skin test.

From the entire group tested I was able to immunize 209 individuals, all of whom had given a strongly positive reaction to the first skin test. An arbitrary dosage scheme of 0.2 cc., 0.5 cc., 1.0 cc. and 1.5 cc. of the undiluted toxin, spaced seven days apart, was selected. There were no untoward effects, the chief complaint being soreness at the site of injection. On two occasions the dose was modified, one patient receiving the first

TABLE 4
TABLE OF THOSE SUBSEQUENTLY IMMUNIZED
(Contacts and Patients Excepted)

	1d-5y		6y-10y		11y-15y		16y-20y	
M	1	4	28	67	40	70	3	3
	+	—	+	—	+	—	+	—
F	2	7	29	38	49	52	9	15
	3	11	57	105	89	122	12	18

Of the total (417), 161 were positive.
Of this number, 148 were immunized.
Positive reactors after two weeks . . . 31.3%.
Positive reactors after four weeks . . . 7.4%.

two doses of the series, but was negative at the end of six weeks.

One-hundred and forty-eight of those immunized were skin tested at the end of two and four weeks. These figures are presented in Table 4. As can be seen, the time element plays an important part in the development of immunity. After four weeks only 7.4 per cent had failed to revert, and even those who remained positive after immunization gave a uniformly less intense reaction than before.

As has been pointed out, there is a tendency for the number of positive reactors to decrease as the age increases. However, newborn babies have a lower percentage than those above six months. In an effort to correlate this observation, tests were done on mother and their newborn infants. From Table 5 it can be seen that the child's re-

TABLE 5
MOTHER AND CHILD

	Mother	Child	Child
L. A.	+	—	
M. P.	+	—	—
B. L.	—	—	
M. P.	—	—	
L. W.	—	—	
L. C.	—	—	
M. G.	—	—	
W. M.	—	—	
M. B.	—	—	
P. J.	—	—	
B. S.	—	—	
L. B.	—	—	
M. K.	—	—	
A. H.	—	—	
A. M.	+	—	
L. F.	+	+	
C. W.	+	+	
C. C.	—	—	
J. H.	—	—	
C. C.	—	+	
H. Mc.	—	—	
T. F.	—	—	
M. H.	—	—	
R. J.	+	—	
Babies G	—	—	—

action followed very closely that of the mother, eighty per cent giving the same reaction as the parent. It appears then that there is a transfer of passive immunity from mother to child.

Since I had the standard toxin available and had suitable positive reactors on the ward, I used the spinal fluid of four proved cases of meningococcic meningitis as skin test material. The spinal fluid was prepared as follows: The fluid was removed from the patient on admission, filtered through a Berkefeld filter, and 0.5 per cent phenol added. The fresh material was used undiluted in 0.1 cc. doses parallel to the standard toxin in various dilutions. All patients gave strongly positive reactions to the standard toxin but were uniformly negative to the spinal fluid. Either the spinal fluid of these patients contained no toxin or, if present at all, was in minute quantities. With the standard toxin I obtained positive reactions with dilutions as high as 1-3200.

CONCLUSIONS

1. A series of 917 patients of all ages, male and female, white and colored, were skin tested with meningococcus toxin.
2. Two hundred and nine of the positive reactors were immunized with injections of the toxin.
3. More positive reactors were found among females than among males.
4. With the exception of the newborn children, the number of positive reactors decreased as the age increased.
5. The spinal fluid in meningococcic meningitis patients does not appear to contain uncombined or free meningococcus toxin in detectable amounts.
6. There was a very high percentage of reversals following immunizing doses of toxin.
7. There appears to be a passive transfer of immunity from mother to child.

We wish to acknowledge the courtesies extended to us by Miss Ruby Bishoff, Supervisor, Isolation Division, Louisville City Hospital, who gave much of her time and thought to this study, and, as a contributor, aided greatly in making this investigation possible.

"It seems that every possible educational effort should be made to get people to use whole wheat bread in place of white bread. For those who cannot be reached, the enriching of white bread is the next best effort."

ABRUPTIO PLACENTAE*

REPORT OF 90 CASES

By

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Abruptio placentae, premature separation of the normally implanted placenta, is a major contributor to intrapartum and postpartum hemorrhage. This paper is primarily an analytical study of 90 such cases with therapeutic discussion based largely upon results of that study. In order to properly introduce this subject, a few preliminary remarks are in order.

The incidence of true abruptio is too variable to make any positive statement. In this series, there was one abruptio to every 209 term deliveries.

The etiology is also rather unsettled. Textbooks mention trauma, toxemia, and previous endometritis in about that order. A history of trauma was found in only two cases of this series. I believe that many of us now agree on the toxemia concept and this series lends confirmatory evidence to that idea. Many recent writers, either by a process of elimination of other possible etiologic factors or by an attempted direct proof through exhaustive gross and microscopic study of placental tissue, have come to consider the placenta itself the primary offender in initiating the entire clinical and pathologic syndrome which we term eclamptogenic toxemia. Placental infarcts, and their subsequent autolysis, have long been discussed as possible etiologic factors in eclampsia. Investigators at Emory University have recently again popularized this idea. Their explanation of low basal metabolic rate, hypercholesteremia, exciting agent, cholesterol vascular placental changes, infarctions, autolysis, and toxic amino acid is plausible but unverified. If we accept any such placental origin, regardless of the exact mechanism, we must, of course, admit that such a pathologic placenta is capable of extensive local degenerative changes as well as producing more distant lesions through dissemination of its toxins. It is thus not hard to visualize

*From the Obstetrical Services, Hillman Hospital and Norwood Hospital. Read before the Jefferson County Medical Society, March 16, 1942.

a direct relationship between eclamptogenic toxemia and abruptio placentae if we accept the chorionic origin of the former. It might even be suggested that the only reason many of the severely toxic patients in this study did not eventually reach a convulsive stage was simply the fact that they exploded in the form of an abruptio first. The finding of only one patient with fits in this series of 90 abruptios might substantiate this idea.

The actual pathology necessitates no such speculation. Careful placental study by capable observers reveals striking similarities between toxemia and abruptio placentae. The fresh hemorrhagic areas are of course not present in the former, but the type and nature of infarcts and finer details of vascular and structural appearance are quite alike. Some writers describe an end-arteritis in the terminal uterine vessels, but these could be of toxemic origin. The initial lesion of the actual abruptio is a diapedesis of red blood cells from maternal arterioles into the decidua basalis. Rhexis of smaller vessels soon follows with eventual rupture of larger ones. This creates a retroplacental hematoma which may completely dissect away the placental attachment or involve only a small portion of it. The hematoma may strip away the amnion from the lower uterine segment and cause external hemorrhage, may rupture into the amniotic sac with resulting internal or concealed hemorrhage, or may do both. Fetal survival will depend upon the relative placental area involved. If pressure becomes sufficient, red blood cells may infiltrate the myometrium producing ecchymotic spots on the serosal uterine surface and rarely uterine paralysis. This last condition is termed utero-placental apoplexy or Couvelaire uterus.

Standard texts should be consulted for complete discussion of symptomatology and diagnosis. For our purposes the cardinal symptoms are pain, hemorrhage, and tender or tetanic uterus, with eventual indications of fetal distress and maternal shock if the abruptio is extensive. All gradations of severity are seen from mild symptoms with small localized tender uterine areas to those cases with explosive onset and severe hemorrhage rapidly leading to fetal death and maternal shock. In a frank case, the diagnosis is seldom in doubt, but in a mild case the only confirmatory evidence may be the placental appearance at delivery.

With these introductory remarks, I now wish to present results of a study of 90 cases and later to consider therapeutic measures in the light of the results obtained. These are collected cases from the Hillman and Norwood Hospitals and are by no means all my own cases. Those from Norwood are mostly mine, but the Hillman cases represent work of the entire obstetric staff of that institution. One series goes back to 1930; the other to 1931. No comparison of results is intentionally stressed; both series are utilized for the sake of sufficient volume to warrant statistical investigation.

To those of you engaged in obstetrics it is quite apparent that all abruptios should not be studied in one group because choice of therapy and end results must obviously be influenced by the severity of the abruptio. I have, therefore, devised a more or less arbitrary classification which appears logical for purposes of discussion.

ANALYSIS OF 90 CASES

For publication, certain abbreviations are necessary in these tables.

TABLE 1
METHOD OF CLASSIFICATION

Group I.	External and/or internal hemorrhage of mild degree. Uterus suggestive but not tetanic. No shock. Definite placental evidence.
Group II.	External and/or internal hemorrhage of moderate degree. Uterus tetanic. Shock mild or absent. Definite placental evidence.
Group III.	External and/or internal hemorrhage of severe degree. Uterus tetanic. Definite shock. Definite placental evidence.
Group IV.	True utero-placental apoplexy as confirmed by operation or autopsy.

TABLE 2
STANDARDS OF TOXEMIA

(Any two must be present)

1. Blood pressure: 140/90.
2. Albuminuria: 2 plus, trace, 200 mg., 0.2%.
3. Symptoms: Edema, headache, visual disturbance, epigastric pain, oliguria, etc., with or without convulsions.

(Note: The albuminuria must be present other than just following hemorrhage.)

TABLE 3
ACCOUCHEMENT FORCE

This table shows that of five cases of manual dilatation of cervix, one patient had an apparently uneventful recovery, one patient eventually recovered after a long and stormy period of sepsis, and three patients promptly died of hemorrhage, uterine rupture, cervical laceration, etc.

TABLE 4
MATERNAL DEATHS

- 1. Group I. Low forceps. Eclampsia. Died of pulmonary edema.*
- 2. Group II. Spontaneous. No donors. Postpartum hemorrhage. Utero-placental apoplexy?
- 3. Group III. Section. Sepsis. Surgical technique?
- 4. Group III. Mid-forceps by resident. Died on table.
- 5. Group III. Manual dilatation. Died of sepsis and thrombosis.

- 6. Group III. Section. Died on table. Acacia. No transfusion.
 - 7. Group III. Manual dilatation. Died of uterine rupture.
 - 8. Group III. Manual dilatation. Died of postpartum hemorrhage and shock.
 - 9. Group IV. Spontaneous. Died of postpartum hemorrhage. No donors. Utero-placental apoplexy (autopsy).
- *This case removed from corrected mortality as her death was not due to abruptio, but eclamptic pulmonary edema.

TABLE 5
PARITY

This table shows that 50 per cent of the maternal deaths occurred in patients who were para 6 or more, although this type constituted only 15 per cent of the total series.

TABLE 6
GROUP II
THERAPEUTIC MEASURES OTHER THAN
ACCOUCHEMENT FORCE

Caesarean (11)			Others (27)			
Cervix	Mother	Baby	Cervix	Delivery	Mother	Baby
0	ok	dead	3	B. H.	ok	ok
0	ok	dead	4	V.	ok	ok
1	ok	dead	full	V.	ok	ok
0	ok	dead	3 plus	L. F.	ok	dead
0	ok	ok	full	L. F.	ok	ok
1	ok	twins ok	2 plus	Sp.	ok	dead
2	ok	ok	2	Sp.	ok	dead
1	ok	ok	3 plus	Sp.	ok	ok
1	ok	dead	3	L. F.	ok	dead
2	ok	dead	2	Sp.	ok	dead
2	ok	ok	3	F. R.	ok	dead
			3	Sp.	ok	dead
	0%	54%	2	Sp.	ok	dead
			?	Sp.	ok	ok
			3	Sp.	ok	dead
			?	Sp.	ok	ok
			2	L. F.	ok	ok
			2 plus	V.	ok	dead
			2	Bag-Sp.	ok	dead
			2	B. E.	ok	ok
			4	Sp.	ck	dead
			3	Sp.	ok	dead
			3	Sp.	ok	dead
			full	Sp.	ok	ok
			4	Sp.	ok	dead
			3	Sp.	ok	dead
			2	Sp.	died hem.	dead
					3.5%	60%

Sp.—Spontaneous Vertex
V.—Version
F.—Forceps
B. H.—Braxton Hicks

TABLE 7
GROUP III
THERAPEUTIC MEASURES OTHER THAN
ACCOUCHEMENT FORCE

Caesarean (17)			Others (6)		
Cervix	Mother	Baby	Cervix	Delivery	
0	ok	dead	3	B. H.	ok dead
0	ok	ok	full	V.	ok dead
1	ok	ok	full	P. F.	ok dead
2	ok	dead	full	M. F.	died dead
1	ok	dead	3	Sp.	ok dead
2	ok	dead	4	Sp.	ok dead
2	died of sepsis	ok			17% 100%
2	ok	dead			
1	ok	dead			
0	ok	dead			
0	ok	dead			
1	ok	dead			
1	ok	ok			
?	died on table	dead			
1	ok	ok			
1	ok	dead			
1	ok	dead			
	12%	70%			

TABLE 8
COMPARATIVE FIGURES OF THE TWO SERIES

This table shows that Hospital A, 24 cases, 13 sections, had an uncorrected maternal mortality of zero and an uncorrected fetal mortality (two non-viables) of 50 per cent. Hospital B, 66 cases, 16 sections, had a corrected maternal mortality of 12.1 per cent and an uncorrected fetal mortality (one non-viable) of 65.1 per cent.

TABLE 9
SUMMARY OF ALL CASES

		Maternal Mortality	Fetal Mortality	Toxemia
Group I	20	0	35 %	35 %
Group II	41	2.4%	58 %	58 %
Group III	26	23 %	80.7%	76.9%
Group IV	3	33.3%	100 %	66.6%
	90	8.9%	61.1%	

What comments may be made in the light of these findings? Some are quite obvious, others somewhat controversial.

1. The incidence of toxemia is too high to be merely coincidental. A definite etiologic relationship seems quite evident.
2. Multiparae are more likely candidates than primiparae. Increasing multiparity will usually increase the clinical severity and adversely affect maternal prognosis.
3. Fetal prognosis is poor at best with a mortality of 35 per cent in the mild group. In a severe case, the fetal outlook should receive scant consideration; maternal welfare alone should dictate our therapeutic decisions in these cases.

4. Accouchement force, especially manual dilatation of the cervix, has no place in our therapeutic deliberations. Such cervixes are not dilated; they are torn.
5. Blood matching and transfusion should be our first therapeutic thought. This is a sheet anchor in all cases of hemorrhage and these reports surely verify this statement. Blood plasma and gum acacia are probably the best substitutes while waiting for donors, but caution is expressed regarding too much glucose, and condemnation is in order regarding simple blood dilution with saline.
6. No operative measure should be attempted before adequate shock correction. If no blood donors are available, conservatism will probably be our best policy, even with the patient in shock.
- I firmly believe the above statements are quite valid and hardly open to criticism. Some of the following comments may provoke controversy:
7. The patients in Group I, the mild type, will usually require only careful hospital observation, precautionary blood matching, and prompt delivery after the completion of the first stage. Labor may occasionally be facilitated by rupture of membranes. Pituitrin should not be used. Delivery should be from below.
8. Differences will arise in the management of cases in Group II. Some such cases with unsuitable cervixes may require cesa-

rean section. This may be especially true if fetal heart tones are still good. Fetal mortality will run about 50 per cent regardless of management. If the cervix is not suitable and if preparations for blood replacement have been made, cesarean section by a capable operator should merit no criticism. If the cervix is dilating well and possible delivery from below can be visualized in the not too distant future, blood transfusion and expectancy in this group should likewise merit no condemnation. Delivery from below should be accomplished at the earliest possible moment by forceps, version and extraction, or by Braxton Hicks version. Delivery should not be hasty, especially if the cervix is not completely dilated. Occasionally, rupture of membranes will expedite matters. The mortality from any type of section will run from 1 to 4 per cent in the most capable hands. The mortality from conservatism under these circumstances will hardly be less. Fetal mortality of 54 per cent in the section group and 60 per cent in the conservative group are about the same.

9. Therapeutic considerations of a case in Group III will probably provoke argument also. These patients are in shock and corrective measures for shock are our initial concern. Blood replacement is paramount and it is only after such corrective measures that delivery should be considered. In this group I doubt the logic of ultraconservatism. These patients have already been in shock and will probably return there sooner or later unless the source of hemorrhage has been removed. Fetal mortality is too high to warrant much concern about fetal prognosis. Unless the cervix is fully dilated or nearly so, immediate abdominal delivery seems advisable while the patient is still in a physical state to undergo it. If the cervix is fully dilated, immediate delivery from below by forceps or version is indicated. Intrauterine tamponade should follow delivery from below and occasionally may be advisable following abdominal delivery. The immediate postpartum behavior of such a uterus should be carefully observed because a certain small percentage will exhibit the characteristic features of utero-placental apoplexy; namely, total paralysis of muscle fibers with complete inability of contraction resulting in a big, boggy, hemorrhaging uterus. If this is found at section, an im-

mediate Porro should be performed. If found after delivery from below, some such patients may die of postpartum hemorrhage before hysterectomy can be done. I should definitely favor section in a group III case if rectal examination reveals little or no cervical dilatation. Sometimes the degree of cervical dilatation will be an agreeable surprise. In advocating section for many of these patients I definitely oppose the advice and teaching of some prominent authorities. However, I find the authorities unable to agree among themselves, and a study of recent literature shows them to be quite willing to criticize one another. Ultraconservatism may become radicalism. I believe that statement could apply to management of this type of patient.

10. The cases in Group IV, the utero-placental apoplexies, are indeed formidable problems. About the only antepartum clue to the presence of this dangerous infiltration of myometrium is the absence of progressive cervical dilatation within a reasonable time. This paralysis may produce uterine inertia before delivery and a dangerous, if not fatal, uterine atony after delivery. Fortunate is the attendant who has delivered such a patient by section. An immediate Porro may be a life-saving measure. Delivery from below, with a subsequent hysterectomy, does not offer nearly so favorable a prognosis. All three cases of Group IV in this series were verified, two by study of the operative specimens and one by autopsy. A staff man at Hillman performed one operation and a capable resident on the Obstetric Service is credited with the other. The third case was delivered from below before the true nature of the apoplexy was discovered and died of postpartum hemorrhage despite uterine packing and blood transfusion while the operating room was being set up for hysterectomy. The fatal case in Group II was probably a true apoplexy, but autopsy was not obtained.

A question may arise concerning the logic of advising conservatism in the management of a patient in shock and at the same time suggesting more active measures for a similar patient not in shock. It may be argued that if conservatism is best for the one it should likewise be best for the other. I would answer such a question by stating that I should consider the prognosis more favorable for a patient not in shock treated

by immediate delivery than that of a patient in shock treated expectantly if donors are not available. If shock is not combated, prognosis is poor regardless of the therapeutic measures instituted for delivery purposes.

I have intentionally avoided any discussion of the relative merits of rectal versus vaginal examination and classical section versus low cervical section.

SUMMARY

1. Eclamptogenic toxemia plays some role in the etiology of abruptio. The present theory of placental origin of toxemia sounds logical with reference to an associated abruptio.

2. Multiparity adversely affects maternal prognosis.

3. Fetal prognosis is unfavorable regardless of the severity of the disease or the treatment instituted.

4. Blood replacement is a sheet anchor in pregnancy hemorrhages in general and in abruptio in particular.

5. Manual dilatation of the cervix merits absolute condemnation.

6. Patients in shock should not be subjected to operative deliveries.

7. Mild cases, as included in Group I, should be treated expectantly, with delivery from below.

8. Expectancy may be carried further in those cases of Group II where delivery from below may be anticipated within a reasonable length of time. Repeated transfusions may be necessary to do this. If the cervix is not suitable, section should be considered.

9. The cases of Group III, those in shock, demand prompt blood replacement to be followed by prompt delivery. Expectancy and conservatism hardly seem logical in this group. Unless the cervix permits prompt delivery from below, section is indicated.

10. True utero-placental apoplexy will necessitate hysterectomy. Abdominal delivery will afford an opportunity for this, while delivery from below will not.

11. Certain selected cases of the more severe form of abruptio placentae present valid indications for cesarean section. Certain others, both severe and mild, should obviously be delivered from below. Obstetric judgment must decide which method of delivery to elect. Inflexible policies which fail to take into account individual case variations are neither rational nor logical.

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Mental Hygiene—Parents should not over-excite children. Parents should remember that children are not their playthings to be poked at and tossed about. Children are assets; raising them is serious business. Parents should give their children a sense of security in the child's own small world. All along the way the parent should guide the child and try not to let him go off the track of normal development. For example: it is important for a boy to keep abreast of his group and be able to do what his friends can do. . . The child must be recognized not only as the future soldier or the future mother of soldiers but as the ultimate unit in our democratic civilization.—*Moore, Virginia M. Monthly, March '42.*

ACUTE BILATERAL SECONDARY SURGICAL PAROTITIS

PROMPT RECOVERY WITH SULFATHIAZOLE

REPORT OF CASE

By

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This case is deemed worthy of reporting because of the seriousness of the condition and its marked morbidity and mortality (30-50%).¹ A search of the literature reveals but two case reports on the use of sulfanilamide in the treatment of surgical parotitis, with complete recovery.^{2, 3} Recently, another one has been reported, with recovery after 48 hours of treatment with sulfadiazine.⁴ As most of these cases of parotitis are staphylococcic infections ascending through Stenson's duct, it would appear that sulfathiazole or sulfadiazine would be the chemotherapeutic agents of choice.

REPORT OF CASE

White man, aged 28 years, was admitted to the Jefferson Hospital on January 31, 1942 because of massive hemorrhage from the stomach. With the exception of occasional heart burn after meals, there was nothing significant in his past history. Physical examination at this time was negative. There was no evidence of circulatory or respiratory disturbance, blood dyscrasia or adenopathy. Spleen and liver were not palpable. Abdomen was soft and no masses could be made out. The red blood count was 3,720,000; hemoglobin 78%; and white blood count 15,250, with 86% polymorphonuclear leucocytes and 14% lymphocytes. Urine showed a trace of albumen. It was felt that the patient was suffering from an acute massive hemorrhage brought on by a peptic ulcer. (Later x-ray studies established a diagnosis of duodenal ulcer.)

The orthodox regimen of treatment—rest in bed, ice bag to epigastrium, withholding of all fluids by mouth for 24 hours, and morphine and

atropin every four hours—brought rapid improvement.

On February 4th, a swelling of the left cheek was noted and the patient complained of pain, dryness of the mouth, and inability to open his mouth widely. Examination revealed moderate swelling in front and below the left ear, tender to palpation. On pressure over the swelling, pus could be seen exuding from the parotid orifice behind the last molar tooth. There was also some swelling in front of the right ear. Temperature was 100° (R). Clearly we were dealing with an acute bilateral symptomatic parotitis. Patient was given ice bags to his cheeks, frequent mouth washes and was advised to chew gum.

On the following day, the swelling had markedly increased on both sides, the overlying skin was red and edematous, and the patient was unable to open his mouth at all. Temperature rose to 104° (R). He was given a small dose of superficial x-ray therapy. Severe shooting pains into his ears followed and there was no change in his clinical picture.

On February 5th, he was given 5 gms. of sulfathiazole in 1½ ozs. of water as a retention enema. This was repeated in 9 hours. The sulfathiazole was administered per rectum for fear of making the patient nauseous, causing him to vomit and increasing his gastric bleeding. These doses of sulfathiazole were again repeated twice on the following day and his temperature fell rapidly to 100° (R). At this time his blood sulfathiazole concentration was 1.48 mgs. %, and his red blood count and hemoglobin were practically the same as on admission. There were definite signs of improvement. The swellings and overlying redness of the skin had subsided markedly. The administration of sulfathiazole was then continued in doses of gr. 15 by mouth every three hours. On February 8th, the third day after starting on sulfathiazole, his temperature had been normal for 24 hours, the swelling on the right side had completely subsided, and on the left it was markedly reduced in size. The overlying skin was perfectly normal. The patient complained of slight nausea, and vomited once. The sulfathiazole was continued in doses of gr. 15 every four hours, and then reduced to gr. 7½ three times a day. His blood concentration rose to 3.5 mgs. % on February 9th, at which time his temperature had remained normal and the swelling over his parotids had completely subsided. He was discharged from the hospital on an ulcer diet on February 15th, in excellent condition, with no residuals of his bilateral parotitis and with no further bleeding from his ulcer.

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Air Embolism—Air can apparently enter the pulmonary vein in three ways. It can be injected directly into the vein when the pneumothorax needle has been inserted too far and has pierced the lung. This is probably the most common accident. Secondly, air can enter through a tear in the visceral pleura where a pneumothorax already exists, and, thirdly, air can be sucked into an injured vein from the pulmonary alveoli.—*McDaniel, Texas State J. Med., April '42.*

ACUTE GASTROENTERITIS DUE TO THE ELABORATION OF ENTERO- TOXIN BY STAPHYLOCOCCUS AUREUS IN BUTTERMILK*

By

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And

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EPIDEMIOLOGIC INVESTIGATION

The following account of an outbreak of gastroenteritis is of interest because buttermilk was the vehicle through which the toxin causing the illness was transmitted. Incrimination of this food product in outbreaks of this sort is not common, as is indicated by the fact that Frank¹ reported but one outbreak during 1938 due to buttermilk, out of a total of 42 outbreaks transmitted through milk and milk products.

In the outbreak being here reported members of four families were involved. Eleven members of two families drank some of the buttermilk and became acutely ill, with vomiting followed by diarrhea, in from one to two and one-half hours after its ingestion. There was some indication that the interval elapsing between drinking the milk and the appearance of the first symptoms was related to the amount of buttermilk consumed.

Six members of these same families ate most or all the other foods served at the meal at which the buttermilk was consumed but did not drink any of the milk, and none of them became ill.

A third family involved, consisting of two members, did not drink any of the buttermilk but used it in making biscuits. About three and one-half hours after eating the biscuits one of these persons suffered severe indigestion but did not vomit or have diarrhea until after taking a dose of Epsom salts. The other individual also ate some of the biscuits but did not become ill.

Upon being accused of responsibility for these cases of illness, the vendor of the buttermilk accepted return of that portion of the product remaining in the hands of the woman who had used it in making biscuits.

*From the Mobile County Health Department and the Bureau of Laboratories of the Alabama State Department of Health.

1. Frank, Leslie C., Pub. Health Rep. 1940, 55: 1373.

To demonstrate his confidence in the potability of the product he drank some of the buttermilk in her presence. Two and one-half hours later he was acutely ill with the same symptoms as the other patients.

All the patients had recovered, except for some degree of weakness, on the day following onset.

SOURCE OF THE BUTTERMILK

The source of the milk implicated in this outbreak was a family cow which on examination showed no physical evidence of mastitis, nor did specimens of her milk, obtained by the dairy inspector, yield growth of the causative organism. Examination of the milker for evidence of sores on his hands or for a history of sore throat was negative. Examination of the wife of the vendor of the buttermilk, the one who actually handled and bottled the product, was equally uninformative.

Needless to say, there was no sterilization of the utensils in which the milk was collected, stored or sold.

LABORATORY INVESTIGATION

Because of the short elapsed time between the ingestion of the buttermilk and the appearance of symptoms it was felt that probably the illness was due to preformed toxin, such as that produced by certain of the staphylococci rather than by any member of the Salmonella group, although efforts were made to isolate these organisms had they been present. For this purpose, upon receipt of the buttermilk in the laboratory, direct streak plates were made using Endo and desoxycholate-citrate agar. Enrichment of any enteric group organisms that might be present was also attempted by inoculation of 15 cubic centimeters of the buttermilk into selenite F² broth with incubation for 20 hours at 37°C. followed by streaking of selective differential plating media. In all instances the cultures were negative for members of the Salmonella group.

Parallel with the above, media plates of plain nutrient agar and blood agar were also inoculated. On all these, growth of an aureus type staphylococcus was abundant and from them pure cultures were isolated and studied with reference to their cultural characteristics and effects when inoculated into animals.

2. Leifson, E., Am. J. Hyg. 1936, 24: 423.

1. *Test for pathogenicity.* Pure cultures of the staphylococcus in nutrient broth were incubated 24 hours at 37°C. and 0.5 cc. of the growth injected intravenously in a 1915 gm. rabbit. At the end of 6 days this animal had lost 490 grams in weight and on the 8th day it died. Postmortem examination showed multiple necrotic lesions on the surface of the heart as well as throughout the heart muscle. There were also many lesions in the pleural cavity and from them *S. aureus* was recovered in pure culture.

2. *Tests for enterotoxin production.* For these tests a culture of the staphylococcus isolated directly from the buttermilk was used and the technique of Dolman³ followed; that is, the culture was grown on semi-solid agar for 48 hours at 37°C. under 30% CO₂ tension. This material was then rendered bacteria-free by filtration through a Seitz filter pad and heated in a boiling water bath for 30 minutes to destroy any A or B toxin that might be present.

Two kittens, weighing 464 and 387 grams respectively, were inoculated intraperitoneally with one cubic centimeter (per kilogram of body weight) of the heated culture. In both animals there was an immediate response characterized by increased activity and marked irritability.

One hour later a second injection, identical in amount, was given in the same manner. Following this second inoculation the kittens exhibited marked lassitude, followed in one hour and 18 minutes and one hour and 3 minutes respectively by vomiting and movement of the bowels. Recovery was eventually complete, though after 16 hours one kitten was still quite ill.

As a control on the *S. aureus* tests, a culture of *S. citreus* isolated from milk was grown on the same medium under CO₂ tension, filtered, and injected in identical amounts into two kittens. At no time did either of these animals show any discomfort, vomiting or diarrhea.

SUMMARY AND CONCLUSION

1. Epidemiologic investigation of an outbreak of gastroenteritis indicated that it was attributable to the ingestion of homemade buttermilk.

2. Eleven persons—in four families—became acutely ill with vomiting and diarrhea after drinking the buttermilk.

3. Dolman, C. E., and Wilson, R. J.: *J. Immunol.* 1938, 35: 13.

3. Six persons—in two of the same families—partook of the same foods but drank no buttermilk and none of them became ill.

4. In a third family the buttermilk was used in the preparation of biscuits; one person complained of indigestion following the meal at which these biscuits were served.

5. From the buttermilk a pure culture of *S. aureus* was isolated, which, grown under proper conditions, produced an enterotoxin demonstrable by the Dolman kitten test.

SPECIAL ARTICLE

PROCUREMENT AND ASSIGNMENT SERVICE QUESTIONNAIRE

There has been sent out by the Procurement and Assignment Service a complete and final questionnaire, which should be filled out by every doctor in the country, by means of which the national roster of physicians, dentists and veterinarians will be brought up to date for employment by the Procurement and Assignment Service.

Because there is a very distinct tendency on the part of doctors to be resentful of, and negligent with, questionnaires, it should be plainly stated that this questionnaire is not primarily for the benefit of the Government. It is preeminently for the benefit of the doctor, aimed as it is by means of the information obtained from it to get him into the place he can best occupy. It is striking evidence of the trust that is placed in him, on the part of the Government to be willing to let him do, without pressure, whatever he is best suited to do in this period of national need.

The physicians of this country have invariably responded to the needs of the armed forces whenever they have been called upon. The Selective Service System makes every man in the United States under 45 years of age available on call. Complete cooperation through use of the enrolment form and through direct application by those ready to volunteer immediately will meet the various demands on medical services without making necessary any call on the Selective Service System for the provision of necessary physicians to the armed forces.

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TREATMENT OF PEPTIC ULCER WITHOUT ALKALIS

"The use of alkaline substances in the management of peptic ulcer is almost universal, and such treatment is recommended in nearly all the current textbooks dealing with the subject. It is commonly assumed that complete neutralization of gastric acidity represents the ideal condition for ulcer healing, although no proof of this assumption exists. Furthermore, it is not certain that the highly alkaline stomach content obtained periodically in the course of alkali therapy is conducive to healing. That the conventional methods of treatment are not entirely satisfactory is manifest by the fact that scarcely a year passes without one or more new ulcer treatments being advocated."

The above are the opening lines of an article by Dick and Eisele¹ dealing with this subject. The authors further remind us that the commonly recognized disadvantages of alkali therapy are:

1. Alkalis may produce secondary acid secretion.
2. At times, alkalosis may be produced, especially in patients with pyloric obstruction, renal impairment or severe anemia.
3. Some alkalis, notably calcium

carbonate and phosphates and bismuth compounds, cause constipation. 4. The use of alkalis may result in the formation of kidney stones. 5. Aluminum hydroxide and aluminum sulfate may have deleterious effects. The authors have for many years "treated peptic ulcers essentially without the use of alkalis, that is, they were given only in individual doses when necessary to control pain early in the course of treatment."

Their report is based on the study of forty-one patients with peptic ulcers who before treatment showed definite ulcer craters. X-ray studies were made during treatment at frequent intervals to indicate the course of the crater. "These patients were given 1 to 4 ounces of a mixture of equal parts of milk and cream at hourly intervals during the day and often during the early evening. In a few instances in which cream was poorly tolerated, milk alone was given. When all distress was relieved, small amounts of bland foods were added gradually. Added vitamins were given in most cases. The importance of physical and mental rest was emphasized. Atropine was given in some cases. In 8 cases a few single doses of alkali were given to control pain." And the authors conclude that the treatment outlined above "brought about (1) the prompt disappearance of symptoms and the complete comfort of the patient, (2) the disappearance of occult blood from the stool when it was present, and (3) the disappearance of the x-ray crater."

Dick and Eisele assert that "these data demonstrate that healing of peptic ulcers will progress satisfactorily without the attempted neutralization of gastric acidity with alkalis. It appears that it is only in the exceptional case that recovery will take place on alkali therapy and not without it. On the other hand we have observed several patients who did poorly on Sippy treatment whose response was notably better with the management described in this paper."

For some time there has been a growing tendency to question the value of alkalis in treating peptic ulcer and many thoughtful and observant clinicians have warned against their indiscriminate use in particular. The work of Dick and Eisele is thought-provoking and will doubtless receive serious consideration, though the fact that it was

1. Dick, George F., and Eisele, C. Wesley: Peptic Ulcer, J. A. M. A. 118: 38 (Jan. 3) 1942.

limited to only forty-one patients calls for its confirmation by other observers. Even though many practitioners will not agree with all of the Chicago investigators' conclusions, it is probable that only a few will take exception to the following paragraphs: "The treatment of peptic ulcer is usually considered to consist of two phases, the treatment of the immediate attack and the prevention of recurrences. Peptic ulcer is notoriously a chronic disease subject to recurrences, perhaps spontaneously, perhaps under adverse conditions such as fatigue, emotional stress and infections. It is not within the scope of this paper to discuss the prevention of recurrences. It is illogical, however, to expect the use of alkalis to prevent recurrences unless one is willing to advise such use throughout the life of the patient."

"In many instances such ingestion of alkali would probably be more detrimental than the ulcer itself. Except for general hygienic measures, adequate prevention of recurrences awaits the solution of the problem of the etiology of ulcer."

Medical Preparedness

HOSPITALS TO BE REIMBURSED FOR CARE OF CIVILIAN CASUALTIES

Payment for temporary hospitalization of civilians injured as the result of enemy action has been made possible by a recent agreement between Administrator Paul V. McNutt of the Federal Security Agency and Director James M. Landis of the Office of Civilian Defense. The funds have been allocated to the U. S. Public Health Service by the Federal Security Administrator from funds made available to him from the President's emergency fund. A joint memorandum embodying the details of the program has been issued by Surgeon General Thomas Parran of the U. S. Public Health Service and Dr. George Baehr, Chief Medical Officer of the Office of Civilian Defense.

The plan provides that all hospitals caring for civilian casualties in the event of air raids or other enemy action will be reimbursed by the Federal Government at a rate of \$3.75 a day. This is the rate of reimbursement established by the Federal Board of Hospitalization for federal bene-

ficiaries in government hospitals and may be changed as conditions require, it was stated.

Any hospital in the nation, voluntary or governmental, may be used as a casualty receiving hospital in the Emergency Medical Service established by the Medical Division of the Office of Civilian Defense. In addition, certain hospitals and other institutions in "safe areas" may be used as emergency base hospitals for casualties or other patients whom it may be necessary to evacuate from urban hospitals in exposed areas. The new agreement provides that federally owned equipment may be loaned to the base hospitals and that their staffs will be supplemented by physicians of the region who will be commissioned in the reserve corps of the U. S. Public Health Service. It was emphasized that management and control of all hospitals, both local casualty receiving hospitals and emergency base hospitals, will remain the responsibility of the local or state authorities.

In the establishment of emergency base hospitals, emphasis will be placed on the relative safety of the area and the availability of existing hospitals and other institutions. Hospitals are now being surveyed for this purpose and will be classified on a basis of size, equipment and standards of operation.

It is proposed to begin immediately the organization of medical staffs for future base hospitals as hospital units affiliated with casualty hospitals similar to the affiliated general hospitals of the Army. The physicians, surgeons, specialists and dentists who are to be commissioned in the Public Health Service Reserve for service in these hospitals will receive rank, pay and allowance equivalent to those of the Medical Corps of the U. S. Army. They will be selected from older age groups, from physicians with disabilities that make them ineligible for military service and from women physicians. As far as possible, they will be assigned to service in the regions in which they live. Because they are to function as balanced professional staffs, they will be recruited from the staffs of civilian hospitals and cleared through the Procurement and Assignment Service.

PLAN TO ESTABLISH BLOOD BANKS

Hospitals in communities exposed to war hazards may receive assistance in the establishment of a blood and plasma bank through funds available to the U. S. Public Health Service, which will be administered by it through the Medical Division of the United States Office of Civilian Defense. In addition to providing whole blood or liquid plasma for the current needs of hospitals, these blood banks as well as others already in operation are to accumulate a reserve supply of plasma for civilian casualties caused by enemy action. Technical and bacteriologic safeguards are to be observed as recommended by the Subcommittee on Blood Substitutes, Division of Medical Sciences of the National Research Council. At the request of the Office of Civilian Defense, a technical handbook on blood and plasma banks has been prepared by this committee, which will be distributed by the Office of Civilian Defense to hospitals.

Following the advice of the committee of the National Research Council, financial and technical assistance will be provided to only 300 hospitals of 200 or more beds approved by the American College of Surgeons and the Hospital Register of the American Medical Association. These hospitals will agree to maintain required technical standards and to accumulate a surplus of liquid or frozen plasma amounting to one unit per bed within three months. Grants will be made only for the purchase of essential equipment if obtainable locally and for sufficient technical assistance to initiate the project. Hospitals will thereafter be expected to continue to maintain the blood and plasma bank to meet their daily needs as well as the plasma reserve for civilian casualties.

Technical guidance has also been made available through the appointment of Dr. John B. Alsever of Syracuse, N. Y., by the Surgeon General of the U. S. Public Health Service and his assignment to the Medical Division of the Office of Civilian Defense as Technical Director of its Blood and Plasma Service. Dr. Alsever will be assisted by Regional Technical Consultants in various parts of the country whose consulting services will be made available to hospitals in their area.

As a further safeguard for the civilian population, the U. S. Public Health Service

is providing for the production of 50,000 units of dried plasma or human albumin in laboratories approved for the manufacture of biologic products by the National Institute of Health. The American Red Cross has agreed to collect the blood for this purpose without interference with its blood collecting services for the armed forces. This second reserve of dried plasma will be distributed to Office of Civilian Defense depots located in various parts of the country. It will be made available by the Medical Division of the Office of Civilian Defense to stricken communities for their casualties whenever their own local stores of liquid or frozen plasma are in danger of being depleted.

Regional Medical Officers of the Office of Civilian Defense who are appointed in the Public Health Service will be the regional representatives of both agencies for this program. State Chiefs of Emergency Medical Service or their deputies may also be appointed consultants or commissioned in the Public Health Service in order that they may act as state representatives for the two agencies in the organization of emergency hospital facilities and the reimbursement of hospitals for the care of civilian casualties. In the more populous coastal states a full time State Hospital Officer may be needed, who will also be eligible for appointment in the Public Health Service.

STATE HOSPITAL OFFICER

Appointment of a state hospital officer as an official of Emergency Medical Service has been recommended by the Medical Division for densely populated states in the target areas. These areas are principally in the First, Second, Third, Fourth, Eighth and Ninth Defense Regions.

The principal function of the hospital officer will be the planning of emergency base hospitals for the reception of civilian casualties and other hospital evacuees. An official memorandum sets forth his duties as follows:

1. To survey the hospitals throughout the state (excluding those in the exposed cities) to determine how many beds can be put into immediate use in emergency with existing kitchen, laundry, sanitation and other engineering facilities,

- (a) by clearing patients to their homes

- (b) by restricting admissions
- (c) by use of rooms not normally used for patients
- (d) by rehousing medical and nursing staff and other hospital personnel outside the hospital
- (e) by use of neighboring buildings (schools, hotels, etc.) for patients (or staff)
- (f) by extra bed accommodation in temporary structures erected on available grounds adjacent to the hospital.

2. To assist in designating for each casualty hospital or group of hospitals in each exposed city,

- (a) the line of evacuation to the base
- (b) the transport arrangements
- (c) the emergency base hospitals provisionally allotted to each casualty unit.

3. To keep constantly informed of the bed state of every hospital in his area by weekly returns.

4. To advise the Office of Civilian Defense, through the Regional Medical Officer, on the need for providing additional accommodations, e.g., by temporary construction or by converting convalescent homes, hotels, school dormitories or other structures into hospitals.

5. To report to the Regional Medical Officer of the Office of Civilian Defense any exceptional conditions requiring action (e.g. beyond state boundaries, or required by the needs of the military situation) and to forward to him copies of a monthly summary report on the State's emergency hospital program. Where a hospital outside a State boundary is readily accessible for the reception of casualties from an exposed city, this fact should also be noted.

6. To maintain constant touch with the other service departments of the State Defense Council (e.g. evacuation, etc.).

7. To supervise the distribution of medical and hospital supplies under the direction of the State Civilian Defense Property Officer and report any threatened deficiency to the Regional Medical Officer.

8. To supervise staff arrangements for emergency base hospitals and for reception areas.

9. To control movements of medical and nursing staff, as well as of casualties in any situation affecting emergency base hospitals.

The hospital officer must work in close collaboration with the state evacuation authority, the memorandum points out. In addition, he may find it necessary to collaborate with the state officer in charge of institutions for the care of mental patients, if such hospitals are to be used as emergency base hospitals for the reception of casualties and other patients evacuated from urban hospitals. Transport arrangements are to be handled in collaboration with the evacuation authorities of the state and the military authorities of the area.

CAMPAIGN FOR DIPHTHERIA AND SMALL-POX IMMUNIZATION

The Office of Civilian Defense, at the request of the Children's Bureau of the U. S. Department of Labor, is cooperating with the Conference of State and Provincial Health Authorities of North America and the Children's Bureau in promoting a campaign for the immunization of children against diphtheria and smallpox. In a memorandum to Regional Officers, the Director of the Office of Civilian Defense directed Regional Medical Officers and Assistant Regional Directors in charge of Volunteer Participation to urge state and local medical defense officials to support the health officers in their communities in this activity as a measure for wartime protection of the civil population.

DECONTAMINATION OF EYES AFTER EXPOSURE TO LEWISITE AND MUSTARD

Since publication of the Office of Civilian Defense handbooks, "First Aid in the Prevention and Treatment of Chemical Casualties" and "Protection Against Gas," further experience has shown that the 2 per cent solution of hydrogen peroxide recommended for the treatment of eyes following Lewisite burns may be injurious if used undiluted. The Chemical Warfare Service now recommends a single instillation in the eyes of a 0.5 per cent solution of hydrogen peroxide as soon as possible after contamination with Lewisite. This solution may be prepared by diluting one part of a 2 per cent solution with three parts of water, or one part of a 3 per cent solution with five parts of water. The solution usually found in drug stores is the U. S. P. strength of 2.5

to 3.5 per cent hydrogen peroxide. A 0.5 per cent solution of potassium permanganate has also been found effective as an eye instillation following exposure to Lewisite.

In planning decontamination stations, the Medical Division, Office of Civilian Defense, recommends that provision be made near the entrance of the second or shower room for the irrigation of the eyes of contaminated persons. The schematic sketch of a decontamination station in the Office of Civilian Defense publications mentioned above shows the irrigation of eyes in the dressing room, whereas this should be carried out in the second or shower room before the bath is given. Delay until the casualty reaches the dressing room will result in more serious injury to eyes which have been contaminated with mustard or Lewisite.

Committee Contributions

Prevention of Cancer

THE WOMEN'S FIELD ARMY

The Women's Field Army of the American Society for the Control of Cancer has been very active this year in the organization of its educational program for the control of cancer.

Mrs. T. M. Francis, of Birmingham, is the very able new State Commander. She has a willing group of vice- and district commanders and county captains.

A meeting was held in Birmingham on March 19 and in Montgomery on March 20 to instruct the district commanders and county captains in their educational campaign on cancer prevention and membership drive to be held during the month of April. Mrs. Horace B. Ritchie, the regional commander for the Southeastern District, attended and gave earnest direction and inspiration for the work to be done. Members of the Association's Committee on Cancer Control attended these meetings. A great deal of enthusiasm was evidenced by all who attended and it appears that this will be a very successful year for the Women's Field Army.

The Governor has issued a proclamation setting aside the month of April for the campaign in this fight against cancer. Much

can be done by the medical profession to aid these enthusiastic women with their work and make them feel that their efforts are appreciated and worth while. Your state committee is working closely with the Women's Field Army. We wish to urge all the county medical societies to cooperate fully through their cancer committees and their individual members with these women in their work.

Maternal and Infant Welfare

DIARRHEA AND ENTERITIS

Diarrhea and enteritis are among the principal causes for our high infant mortality rate. Over three-hundred babies under twelve months of age are dying every year from this cause. It is the third principal cause of death under one year in our state, being exceeded only by prematurity and pneumonia. It is the chief cause of death for the age group, one through four years. In Alabama each year it is taking its toll of approximately 530 babies under four years of age. Most of these deaths could be prevented. We, as physicians, should recognize our responsibility to help save these infants and preschool children. Parents must be taught the importance of taking them regularly to their doctors for periodic check-up examinations and advice regarding diet. We should teach them to boil all water and milk before giving it to infants. Bottles must be sterilized, and the importance of protecting babies and food from flies and insects should be stressed.

If an infant or young child does develop a diarrhea, he should be examined carefully for foci of infection, and stool cultures made to determine the cause of the trouble when possible. Much is gained by taking away all food for at least twenty-four hours and forcing water, weak tea, or sweetened Ringer's solution which most babies take very well. Parenteral fluids should be given when indicated. Fluids and electrolyte administration are a very important part of the treatment. In the severe forms there is dehydration, decrease in volume of blood, impaired circulation and acidosis. In these cases our chief aim is to replace body fluids and minerals and restore the blood volume. Fluids may be injected into any region where there is loose, abundant areolar tis-

sue such as the scapular, axillary, or thigh regions, or it may be given intravenously. The fluid should be warmed to 100° Fahrenheit before it is given. The amount to be administered varies with the weight of the infant or child and the need for fluids. Sixty cubic centimeters of fluid per pound of body weight in twenty-four hours are usually a safe amount to give. Ten to fifteen cubic centimeters per pound of body weight may be given intravenously at one time and repeated if necessary in four to six hours. There are dangers of giving too much fluid at one time intravenously. The parenteral fluids that may be given are physiologic saline, Ringer's, 5 per cent glucose in physiologic saline, or lactate Ringer's. Continuous intravenous fluids may be given for one to two days if necessary, after the dehydration has been relieved, at a rate of about 2 cubic centimeters per pound per hour or one drop per minute for each two pounds of body weight, using the Murphy drip.

Blood transfusions are often indicated but should follow hydration. They should never be given while the patient is in a state of dehydration. Some believe there are fewer reactions if 10 cubic centimeters of sterile calcium gluconate (10%) are injected into the veins just before the transfusion is given. The blood should not be given faster than 5 cubic centimeters per minute and no more than 5 to 10 cubic centimeters per pound at one time. Small frequent transfusions are more beneficial than one large one. The simplest procedure is to use citrated blood, one part of a freshly sterilized 2 per cent solution of sodium citrate and nine parts of blood. With any method, the blood of the donor must be typed and matched with that of the patient. This is even true of a newborn infant.

If the diarrhea is of the infectious type one of the sulfonamide drugs is indicated. To be most effective these drugs should be started early. This is particularly true of sulfaguanidine. Good results have been reported with sulfapyridine and sulfathiazole. Sulfaguanidine is being used experimentally on the typhoid and dysentery bacillus. Sulfanilamide has not shown much effect in experimental infections with dysentery organisms. Sulfapyridine and sulfathiazole may be given in the dosage of 1½ to 2 grains per pound of body weight for the first day

and from 1 to 1½ grains per pound each twenty-four hours thereafter. The total calculated amount for the twenty-four hours is divided into six doses and given every four hours. The maximum dose is three grams. Ravenel and Smith found that the administration of the drug could be stopped in most cases in four to six days, "by which time the stools were normal or nearly normal." Marshall is using sulfaguanidine in the treatment of acute bacillary dysentery in children. He and his coworkers have reported the treatment of seventeen cases in whom diagnosis was substantiated by recovery of the dysentery organism from the stool. The drug was given on a four-hour schedule except in two cases. To be effective this drug must be given early in the course of the infection. They recommend the following program for further trial of sulfaguanidine in acute bacillary dysentery:

Initial dose—¾ gr. per pound

Maintenance dose—⅜ gr. per pound every four hours until the number of stools per day is four or less, then

¾ gr. per pound every eight hours for at least three days.

The sulfonamide drugs may be administered in water, a little honey, or milk if any milk is being given.

When giving the sulfonamide drugs the patient should be kept under close observation. Watch for anemia, hematuria, anuria and rash. The blood needs careful watching. A blood count should be made before their administration and then the patient watched very carefully throughout the administration. Frequent checking of the blood count during the treatment is desirable. The urine should be examined carefully while the drugs are being administered. A fever may occur, especially from the fifth to the ninth day. When it is not possible to watch the blood picture as carefully as it should be, sulfaguanidine may prove to be the safer drug inasmuch as it may be given to patients in amounts to insure saturation of the intestinal contents with the drug and yet have a low concentration in the blood.

Because of the fact many of these infants are suffering from a vitamin deficiency even before the attack of diarrhea, we must not lose sight of the probable need for vitamin administration. If vitamins cannot be tolerated by mouth, parenteral administration may be resorted to. Abt and Far-

mer have found that there seems to be a failure of absorption of ascorbic acid from the intestinal tract during infantile diarrhea rather than to an increased destruction of ascorbic acid by bacteria in the intestinal tract. Intramuscular injections of vitamin B relieve the marked anorexia found in some cases.

After the initial starvation period, feedings should be started carefully, and gradually increased in amount as tolerated. If

an infant is artificially fed, it is well to start skimmed lactic acid milk with 2.5 per cent cane sugar added ($\frac{1}{2}$ teaspoon per 3 oz. of formula), the amount depending on the size and age of the patient. Then whole lactic acid milk may be given and the amount of sugar increased to $7\frac{1}{2}$ per cent ($\frac{1}{2}$ tsp. sugar per ounce of formula). Other foods may be added *slowly* after the stools have been of normal consistency for four or five days.

TRANSACTIONS OF THE ASSOCIATION

1942 SESSION

PART 1

TRANSACTIONS OF THE SEVENTY-FIFTH CONSECUTIVE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA, HELD AT MONTGOMERY, APRIL 21-23, 1942.

First Day, Tuesday, April 21

The Medical Association of the State of Alabama convened in the Blue and Gray Room of the Whitley Hotel, Montgomery, and was called to order at 10:00 A. M. by the President, Dr. J. M. Mason of Birmingham.

Invocation was offered by Rev. Donald MacGuire, Pastor of the First Presbyterian Church, Montgomery.

Addresses of welcome were delivered by Mr. R. S. Hill, Jr., representing the Mayor of the City of Montgomery; and Dr. John L. Branch, President of the Montgomery County Medical Society, host to the Association.

The Senior Vice-President, Dr. R. C. Stewart of Sylacauga, presented President Mason who delivered his message.

Message of the President

Upon my election to the presidency of this august body, I conceived that my first concern was to inform myself as to the duties of the office. These are clearly set forth in Article IX of the Red Book, in five sections, which, for the sake of brevity, I shall quote only with sufficient fullness to make their meanings clear. They are:

1. To preside at all sessions of the Association, and to preserve order.

2. To submit to the Association a message devoted to a discussion of the interests, organization, objects, or business of the Association.

3. To appoint members, counsellors of the Association, and prominent physicians in other states to present papers upon medical, sanitary, or allied subjects at the scientific sessions of the Association.

4. To appoint delegates to the American Medical Association, and to other scientific bodies in which, after consultation with the Board of Censors, it is deemed expedient to have the Association represented.

5. To direct and control, in the interval between the annual sessions, the general policy and business of the Association, with due regard to the opinion and advice of the Board of Censors and the State Health Officer.

The first and second of these sections concern my duties on the present occasion; namely, to preside and preserve order, in which latter requirement, I beg your cooperation; and to present a message, during the delivery of which, I beg your patience.

The other requirements have to deal with my activities since the last meeting of the Association. In accordance therewith, there has been arranged a program which I believe merits your enthusiastic approval. In the preparation of this program I have had the assistance and advice of the four vice-presidents of the Association, and of Doctor Cannon, the secretary; and am indebted to the officers of the Alabama Pediatric Society and of the Birmingham Eye-Ear-Nose and Throat Society for arranging the programs of their respective sections, and to Dr. John Simpson, member of the Board of Censors of the Jefferson County Medical Society, for preparing the panel discussion on poliomyelitis.

We have also introduced a series of medical motion pictures which we hope will prove so interesting as to be made a regular feature of future programs.

Dr. Lloyd Noland has been appointed delegate to the American Medical Association to fill out the unexpired term of the late Dr. J. N. Baker. Dr. Gilbert E. Fisher has been appointed fraternal delegate to the Medical Association of Georgia, which meets a week after our own session has adjourned.

The next requirement, "to direct and control, in the interval between annual sessions," has not the significance now that it had when the constitution was adopted and when the Red Book was first printed in 1913. The compact organization of the State Board of Censors and the active

interest of the State Health Officer have kept the Association running smoothly and efficiently. I have met with the Board of Censors at each of its meetings and have been in frequent correspondence with the State Health Officer. I have also attended as many of the meetings of the four divisions as possible. These meetings are well attended and the programs have been of extreme interest. They have been contributed to by visitors of distinction from outlying districts as well as by members of the Association residing within the divisions. I especially commend the vice-presidents for their work.

Reports from the standing committees will show that they have the keenest interest in their special assignment, and I recommend to you a study of their reports as they appear in the published transactions.

WOMAN'S AUXILIARY

The Woman's Auxiliary has done commendable work during the year under the leadership of Mrs. J. R. Horn, Jr., of Bessemer. The Bessemer, Mobile and Anniston units have been active, the latter in providing facilities for the numerous doctors and their families stationed at Fort McClellan. One of the most useful achievements of the Auxiliary has been the collection of second-hand instruments, medical supplies and physician's samples of medicines all over the state for use in the medical relief of the United Nations. The Birmingham Auxiliary offers two scholarships, one to a physician's daughter at Alabama College, the second a \$1,500 loan scholarship to a medical student. Some of the holders of the medical scholarship are now successful members of this Association. A campaign for improving the health of school children has been carried out in collaboration with the Birmingham Public Schools.

The Medical Association of the State of Alabama desires to thank the Auxiliary for its support and cooperation and to wish the ladies all success in their enterprise and activities. A schedule of Auxiliary meetings being held concurrently with our own will be found on page 11 of the program.

THE JOURNAL

The Journal is deserving of the highest approbation, which I hereby accord it. It accurately records the proceedings of the annual meetings, together with publication of the papers that appear on the program; it reports the current activities of the State Health Department; and its editorial pages ably discuss matters of interest on a great variety of subjects. Two matters in connection with the Journal seem worthy of consideration. This publication is valuable, not only as a recorder of current events, but also as a reference work on Alabama medical activities; and, as times goes on, its value as a repository of facts of historic interest will be enhanced. I should like to see a return to the binding of the transactions in permanent form. As it now stands, those who are interested in maintaining libraries, either their own, or for hospitals or societies, find that an occasional number of the Journal is lost, and these losses are not easily replaced. If this

is not practicable with the present expense of publication, some plan might be worked out whereby bound volumes of the Journal may be supplied by the publishers, at a price, to those who are interested in securing them. The American Medical Association has such a service in connection with its Journal.

The next matter is that of adequate publicity for medical activities in the state. For alphabetical reasons Alabama stands first on all the roll calls of the states. In many ways, this has great publicity value but we are making poor use of it in a medical way. Every week the Journal of the American Medical Association publishes a section called "Medical News" in which is recorded interesting news items from the different states. I am impressed with the infrequency with which Alabama avails herself of her rightful place as first on this roll call. Some reportorial activity on the part of the Journal might correct this.

DEATH OF THE STATE HEALTH OFFICER

In the sudden death of Dr. J. N. Baker, the State of Alabama, as well as the medical profession, has sustained an irreparable loss. In the 69 years of the Association's existence, we have had but four State Health Officers. Each of them had long been identified with the Association; each one contributed his part in developing and perfecting the health system which we now have. We bow our heads in sorrow at the loss of Doctor Baker, and, in the same moment, pay tribute to him for the splendid manner in which he had met the broadly expanded demands of public health service. As a result of the organization which he had built up, the State Committee of Public Health was able to appoint immediately, without going outside of the State Health Department, an acting health officer who has carried on the work without interruption and with undiminished vigor.

IMPROVED MEDICAL SERVICE AND HOSPITALS

In looking over professional conditions throughout the state, one is gratified at the progress that is being made in diagnosis and treatment of disease. Physicians and surgeons who are now coming into Alabama are showing the results of the higher educational requirements which the profession has demanded. As a rule they have had better preliminary education, longer terms of hospital internship and residency than their predecessors and are providing themselves with well equipped clinics and small hospitals where they are enabled to practice medicine as it has been taught them. Through these improved agencies, the people receive more satisfactory attention close to their homes than they have ever been able to obtain in times past. When more extended hospital service is demanded, most rural communities are in reach of the larger hospitals in nearby cities by reason of improved highways and better means of transportation. Personally, I had considered that the problem of rural medical service had been solved until the rubber shortage developed. This will interfere with automobile transportation and, consequent-

ly, with rural medical service to an extent that cannot yet be determined.

In connection with what I have said concerning medical service, I have been interested in statistics published in the Hospital Number of the Journal of the American Medical Association of March 28, 1942.

Alabama is credited with 14 special hospitals and with 55 general hospitals of more than 25-bed capacity. These hospitals have been surveyed by the American Medical Association and the American College of Surgeons. The special hospitals have their own problems and are doing their work well. My particular concern, at the moment, is with the 55 general hospitals.

Surveys of the American Medical Association are concerned mainly with large hospitals in respect to their suitability for training internes and residents. Surveys of the American College of Surgeons cover all hospitals of bed capacity of 25 or more. These surveys of smaller hospitals are concerned in determining whether the hospital is sufficiently well equipped, staffed, and operated to meet minimum standards of requirements for rendering efficient service to its patrons. In addition, the larger hospitals are also surveyed in regard to their suitability for the training of residents in different surgical branches.

In breaking down the statistics of the general hospitals the following facts are revealed:

General Hospitals			
<i>Approved By American College of Surgeons As Meeting Minimum</i>			
<i>Bed Capacity</i>	<i>Number</i>	<i>Requirements</i>	<i>Per Cent</i>
25-50	23	3	13.0
50-100	20	9	45.0
More than 100 beds.....	12	11	91.6

Of the smaller hospitals, the American College of Surgeons has the following to say in its report on Hospital Standardization in the Bulletin of October 1939: "The standardization program of the American College of Surgeons is of prime importance to the small hospital which takes care of a large proportion of patients who are hospitalized. The fact that 30 per cent of hospitals of 25-50 bed capacity, and 70 per cent of hospitals of 50-100 bed capacity in the United States and Canada have places on the approved list of the College, demonstrates that the small hospital realizes its importance and is doing everything possible to better its condition and the service it offers. Moreover, the approval of so many of the smaller hospitals indicates their ability to meet the requirements of standardization."

It will be noted that, instead of 30 per cent approval of our 25-50 bed hospitals, the percentage for Alabama is 13 per cent; and for 50-100 bed hospitals, instead of 70 per cent approval, ours show 45 per cent.

This is not a creditable showing for Alabama, and it is hoped that this report will act as a challenge to those who operate the smaller hospitals

to make greater efforts to meet the minimum requirements of hospital standardization.

MEDICAL EDUCATION

The foregoing remarks in regard to improved medical service and hospital facilities brings us to a consideration of medical education. I feel it incumbent upon me to bring to your attention again the question of a four-year medical school and to urge the Association to bring to bear its great influence in obtaining it.

The University of Alabama is doing excellent work in its two-year school, as evidenced by the fact that the students who are prepared there are accepted for further instruction as third year students at all the larger schools of medicine, and that they hold their own in competition with other students wherever they may have been prepared. Alabama is not lacking in clinical material, or in scientific or clinical teachers. We feel that the time has come in our educational development when the University should be equipped to give the complete medical curriculum of four years, or whatever modification of the term that may be demanded by the exigencies of the war, and that it should be prepared to confer degrees on students of medicine just as it does on students in arts and sciences, and in law and engineering. For further elaboration of the need for a four-year medical school you are referred to those discussions and publications which have so often been presented to you by the dean of the School of Medicine and by other officers of the University. Commitments on this question by various candidates for public office should be given consideration, and all worthwhile agencies that are interested in the movement should have our cooperation and support.

The Alabama Citizens' Committee has been greatly interested in the establishment of a four-year school, as well as in expansion of state hospitals. At the present time, the secretary of this committee, Col. Hopson Owen Murfee, is making a survey of the state in reference to the extent of the prevalence of mental disease, to the end that adequate provision may be made for those so afflicted. I recommend that the Association authorize the appointment by the president of a committee to cooperate with the Alabama Citizens' Committee in conducting this survey and in working for the establishment of a four-year medical school.

THE PRESENT EMERGENCY

The military needs of the country are taking large toll of the members of the medical profession, and the demands of the armed forces are being cheerfully met. These demands are being felt with increasing acuteness by hospitals, industrial organizations, and by the civilian population. These, likewise, are accepting the situation with fortitude.

The plans of the Procurement and Assignment Service have been so well and so frequently presented to you that further reference to the medical military situation is not deemed necessary at the present time.

CONCLUSION

The message I have brought you by no means discusses all the questions of importance that concern us as a medical association and as a State Board of Health. These matters have grown far too complicated to be covered in any one report. Additional and more detailed reports will be presented to you during this session by the Vice-Presidents, the State Health Officer, the State Board of Censors, and by the standing committees. When these reports are before you, you will be informed on all the important details of administration of The Medical Association of the State of Alabama and of its major activity, namely, its function as a State Board of Health.

The President's Message was referred to the State Board of Censors.

REPORTS OF OFFICERS AND COMMITTEES

The reports of officers and committees were received and each referred in its turn, without discussion, to the Board of Censors. These reports follow:

Report of Vice-President Stewart Northeastern Division

The Northeastern Division held two meetings during the past year. The first was at Oneonta, October 9, 1941, with the Blount County Medical Society as host; morning and afternoon sessions, with luncheon served by the Blount County Society. The program: Fractures of the Neck of the Femur, Dr. French H. Craddock, Jr., Sylacauga; The Epidemiology of Acute Anterior Poliomyelitis, Dr. J. M. Kimmey, Anniston; Points of Importance in Gallbladder Surgery, Dr. J. M. Mason, President, Medical Association, State of Alabama, Guest Speaker; Tularemia, Report of a Case with Pulmonary Manifestations, Dr. J. O. Finney, Gadsden; Surgical Diseases of the Thyroid Gland, Dr. J. O. Morgan, Gadsden. All the papers were discussed freely and a good time was had by all.

The second meeting was held at Fort Payne, February 12, 1942, with the DeKalb County Medical Society as host; morning and afternoon sessions, with luncheon served by the Women's Missionary Society, First Methodist Church. The program: Management of Biliary Lithiasis, Dr. W. C. Simpson, Gadsden; Army Hospitals in the Zone of the Interior, Lt. Colonel G. A. O'Connell, Medical Corps, Commanding Officer, Post Hospital, Fort McClellan, Guest Speaker; Diagnosis of Appendicitis, Dr. C. N. Carraway, Birmingham; Diagnosis and Prognosis in Pediatrics, Dr. Amos C. Gipson, Gadsden; Clinical Significance of Jaundice, Dr. J. M. Washam, Talladega. All papers were discussed and every one enjoyed the meeting.

Rabies Control: We in Talladega County were unable to get a veterinarian to take the job of vaccinating dogs in 1941. They said it could not be done with reputable vaccine at fifty cents per animal. It seems to me a new law should be sponsored by this Association carrying a fee suf-

ficient to pay for having the vaccination done properly and by competent men, and then have all dogs vaccinated. This will certainly help in the control of rabies.

Farm Security Administration and Medical Practice: A survey of our division shows that a large number of counties do not sponsor the program at all. Other counties sponsor partial programs. Only two or three counties put on anything like a full program. All the counties claim there is not enough money to pay anything near their fees. Anywhere from thirty to fifty-one per cent is paid. In short, the whole plan is unsatisfactory, from my reports.

We are proud to report that our Division put over the special disability insurance with the Commercial Casualty Insurance Company endorsed by the State Board of Censors.

In checking up on all the Division meetings I think they are consistently putting on very good programs, but I find that only ten to twenty per cent of the membership attends. I want to make a very strong appeal to each of you to attend these meetings. They will be helpful to you and you will help make the meetings better. Last, but not least, it will make all the vice-presidents feel that their efforts are not in vain.

In closing my four years as Vice-President of the Northeastern Division, I wish to thank you for all courtesies and favors extended to me.

Report of Vice-President Tillman Southeastern Division

In submitting my annual report as Vice-President of the Southeastern Division, I want to thank all the doctors in the Division for their loyal cooperation during the past year.

A recent survey of the Division shows that we have 350 physicians, 301 of whom are members of the Association. Of the 49 doctors listed as non-members, 17 are negroes and are not eligible for membership. The membership of the Barbour, Bullock, Chilton, and Lee County Medical Societies is 100 per cent. Four counties have only one non-member and four counties have two non-members each.

Most of our county medical societies meet monthly and have papers read or discussions by local or visiting doctors. Bullock County Medical Society meets twice each month. One society meets every other month and one meets quarterly.

In answer to a questionnaire sent to the secretary of each society, I received replies stating that the spirit and interest in their respective societies were fair to good.

Twenty-three (23) doctors from the Southeastern Division are now in the military services of the United States.

Our only meeting during the year was held in Troy, with the Pike County Medical Society as host, on August 19, 1941. We had an excellent program and splendid attendance. There were more than eighty-five doctors present. Dr. B. F. Austin, Montgomery, discussed Poliomyelitis. Several members of the state official family were present and joined freely in the discussion of this subject. Dr. Robert Beard, Troy, dis-

cussed Subacromial Bursitis. Dr. Gilbert F. Douglas, Birmingham, gave an interesting discussion, supplemented by lantern slides, on Uterine Bleeding. Dr. Clarence Bennett's paper on Addison's Disease was read by Dr. H. G. Clark, Clayton. A barbecued chicken luncheon was served immediately following the scientific program at Murphree Park by the local medical society.

The doctors in the majority of the counties of our Division are engaging in a special type of medical care contract for the population supported by the Farm Security Administration. Information that I get from FSA personnel is that the doctors have furnished satisfactory medical care and hospital facilities to these people at all times during the past year. However, this has been done at considerable sacrifice on the part of physicians and hospitals. It is recommended that a committee be appointed to study the effectiveness of this program in each county in the state with the idea in mind of attempting to obtain a fairer return to the physicians than is now being received.

I urge every doctor to support his county medical society actively since the strength of our state organization depends on this.

Report of Vice-President Smith Northwestern Division

The Northwestern Division has continued the fine work that it has been doing in the past. During the year meetings were held at Moulton, Berry and Florence, thus making at least one meeting easily accessible to the members in the different areas of the Division. Two of our guest speakers were selected from outstanding members of the State Medical Association. These were Dr. M. Vaun Adams of Mobile, and Dr. E. V. Caldwell of Huntsville. At our Florence meeting recognition was given to Dr. John J. Shea of Memphis. The attendance at the meetings averaged from 50 to 60 members.

Visits were made to the Marion and Jefferson County Medical Societies. At the Jefferson County Medical Society a paper was read on Vascular Tumors. Due to the press of time, the various county medical societies were requested to send representatives to a meeting which was held at Parrish, November 2, 1941. At that meeting eight counties were represented. The main problem discussed was that of the FSA contracts. At the direction of the Board of Censors letters were written to all the medical societies in the Division regarding the work with the FSA. Replies were returned by 10 counties. Seven are not making contracts with the FSA this year. A full report was given in the January 1942 Journal of the Association. On the whole, this work is not satisfactory in industrial and highly competitive counties.

Beginning about 1938 there started a slight influx of young medical practitioners in the counties of the Northwestern Division. Since the advent of this nation into war most of these young doctors have been called into the service of their country. The ratio of doctors in this area exclusive of Jefferson county was about one doc-

tor to each 2,000 people. It appears that the ratio of one doctor to each 3,000 people is the highest ratio at which fair medical service could be rendered, as distances in many instances are very great. Therefore it is suggested that the Board of Censors and the Association give some thought to the replacement of young doctors of these areas.

During the past 2 to 3 years there has been a growing tendency on the part of the unions to take over the purchase of medical and hospital care for their members. These men have found that by grouping together they have been able to get higher wages at the same time and are attempting to purchase the same medical care at less cost to themselves. They have been going from doctor to doctor and hospital to hospital trying to gain more service for their money. There has been a tendency on the part of some doctors and some hospitals not only to make contracts directly with these groups but also to underbid fellow practitioners. This can only mean the deterioration of the practice of medicine. It would seem that each County Board of Censors should feel compelled to investigate contracts that one makes and pass upon them, both from the standpoint of ethics and from the standpoint of fees being sufficient to render satisfactory service. It might be well if this Association would consider as to what factor the purchase of group medicine by unions will become in the future so that some adjustment might be made so as to render good service at a fair price.

Several years ago this officer suggested that a new Red Book be furnished each member of the Association. Our present compend is now 14 years old. The secretary of the Association in all probability has the only up-to-date revision extant. If it is not feasible to print a new edition it is suggested that the revisions be printed so that there can be tipped into the present Red Book, and that as new revisions are made the copies be sent to each member of the Association.

I wish to thank the members of the Northwestern Division for their fine cooperation and hope that they will come to the division meetings which are planned for Decatur, Russellville, and Double Springs this year.

Report of Vice-President Jones Southwestern Division

We had two meetings in our Division in 1941; at Thomasville, and Selma, as guests of the respective County Medical Societies. Drs. Julian Graubarth of New Orleans, Harry Cogburn of Mobile, Gilbert Douglas of Birmingham, and John Martin of Montgomery were on the Thomasville program. Drs. W. R. Meeker of Mobile, Thomas Woods of Dothan, Seale Harris, Sr. of Birmingham, and A. F. Wilkerson of Marion were on the Selma program. All meetings were well attended and all papers freely discussed.

At the Selma meeting, I made the following report to the Division: "I have contacted the FSA personnel regarding an increase in the medical fees loaned their clients. I find the FSA at-

titude is as follows: That Alabama is paying as high or a higher rate for medical care of FSA clients than adjoining states. The maximum sum they are willing to allot for medical care of FSA clients is \$14 to \$22. This sum is expected to cover general practitioner care, drugs and emergency surgery, and hospital care. The manner in which this sum is divided is left to the county medical societies, so long as the FSA clients receive necessary medical care. Although grants for medical emergencies are provided in most of the FSA agreements with county medical societies, the policy of the FSA has been to disapprove granting of additional funds for medical care."

This report was discussed and the Vice-President was instructed to contact all the medical societies in our Division and find out what the doctors wanted to do about FSA medical care in 1942. I have visited a majority of the counties having FSA agreements and contacted many doctors in other counties. In some counties the FSA agreements are working satisfactorily and the doctors are not inclined to abandon them. In others there is much dissatisfaction. Six of our counties have no FSA medical care programs. I find that a majority of the county medical societies in the Southwestern Division are not in favor of abandoning their FSA medical care programs.

Eleven counties in the Division have FSA programs; seventeen have one or more venereal disease clinics, thirteen have one or more prenatal clinics, six have child health clinics and five have dental clinics. In visiting over our Division I find the doctors willing and ready to cooperate in any feasible plan for extending medical care to our indigent groups.

In a recent survey of the doctors in the Division, I found that in the 16 counties, outside of Mobile, there are 225 doctors. 42 are under 45 years of age; 51 are between 45 and 60; 119 are over 60 years of age; and 50 are disabled, retired, or not practicing.

Report of the Secretary-Treasurer

Douglas L. Cannon

MEMBERSHIP OF THE ASSOCIATION

The membership of the Association, as enrolled April 1, 1942, is 1,576—eleven less than the number listed in my last annual report to you. The total number of physicians now on the rolls of the Association, including those on active duty with the armed forces of the country, is 1,845—a decrease of ten since last April first, and forty-seven less than two years ago.

PHYSICIANS IN SERVICE

The demands of the several military arms of the government are increasing with such rapidity, and conditions are changing so constantly, that it is impossible at this writing to give either the names or the number of members of the Association who have been called to duty. As soon as these data are available through annual reports of county medical societies now being received, they will be published in the columns of the State Medical Journal. It must be sufficient to say now that, insofar as the Journal's mailing

list is an index, sixty-one Alabama physicians are in service.

DEATHS

Thirty-one members of the Association have died since our last meeting: The State Health Officer, Dr. J. N. Baker, who had served also as President and Secretary of the Association and as a member of its Board of Censors; Active Counsellor F. L. Abernethy; and members Wyatt Barnes, W. A. Beason, O. P. Board, J. W. Bog-gess, Jr., F. P. Boswell, B. S. Chapman, N. G. Clark, J. A. Collins, J. N. Cunningham, F. G. Du-Bose, C. A. Harris, R. C. Haynes, W. B. Hendrick, L. A. Jenkins, Oscar Johnson, Joseph W. Maddox, J. B. McClendon, Hugh McCulloh, R. B. McNeill, R. L. Mitchell, M. L. Morgan, W. L. Nicholls, C. A. Poellnitz, A. S. Pugh, J. G. Staples, T. J. Stough, P. A. Trice, Carey Walker, J. E. Walker and L. L. Wikle.

Other Alabama physicians dying in the same period were C. P. Binford, B. Wilbur Breedlove, J. C. Burkhalter, J. M. Carey, G. W. Davis, W. E. Faris, L. B. Farish, F. H. Gardner, J. F. Huey, H. J. Krudop, W. B. Kyle, E. C. Lindsey, J. W. Moorer, J. H. Owens, Baxter Rittenberry and P. G. Trent—a loss by death of forty-seven in the course of the year.

STATUS OF COUNSELLORS-ELECT

At the last meeting of the Association, seven members—B. F. Austin, J. C. Bragg, R. E. Cloud, C. T. Jones, W. J. B. Owings, A. M. Roan and M. S. Whiteside—were elected counsellors. All have qualified fully as required by the constitution and should be added to the Roll of Active Counsellors on Thursday morning.

PRESIDENTIAL APPOINTMENTS

President Mason appointed Dr. Lloyd Noland a delegate to the American Medical Association, to succeed Dr. J. N. Baker, deceased. Dr. Noland's term will expire with the 1943 session of the national body.

On the committees of the Association, the President made the following appointments:

Public Relations—Dr. John Martin
Mental Hygiene—Dr. Frank Kay
Maternal and Infant Welfare—Dr. A. E. Thomas
Cancer Control—Dr. Karl Kesmodel
Prevention of Blindness and Deafness—Dr. B. B. Warwick
Postgraduate Study—Dr. Cabot Lull
Accidents and Industrial Hygiene—Dr. Marcus Skinner
Archives and History—Dr. Toulmin Gaines
Physician-Druggist Relationships—Dr. Seale Harris, Sr.

Committeemen whose terms expire with this meeting are G. O. Segrest (Public Relations), W. S. Littlejohn (Mental Hygiene), P. S. Woodall (Maternal and Infant Welfare), H. M. Simpson (Cancer Control), Lucien Brown (Prevention of Blindness and Deafness), Ralph McBurney (Postgraduate Study), Earle Conwell (Accidents and Industrial Hygiene) and M. Y. Dabney (Archives and History). It will be a responsi-

bility of the next president to name their successors, to fill the vacancy on the Committee on Physician-Druggist Relationships created by the death of Dr. N. G. Clark, and to appoint a delegate and alternate to the American Medical Association for the 1943 and 1944 sessions of that body to succeed Drs. A. A. Walker and G. O. Segrest, respectively, whose terms will expire with the current year's meeting.

OFFICERS TO BE ELECTED

Officers to be chosen at this session are a president, a vice-president for the Northeastern Division, two censors for five years to succeed Drs. W. D. Partlow and Brannon Hubbard whose terms have expired; and nineteen counsellors.

FINANCE

The accounts of the Association for the period January 1-December 31, 1941 have been audited by Crane, Harper and Wilson of Montgomery and the audit constitutes the concluding pages of this report.

The Auditor's Report

The Officers and Members,
The Medical Association of the State of Alabama.
Gentlemen:

In accordance with our agreement, we have audited the cash accounts of the Treasurer of The Medical Association of the State of Alabama for the calendar year of 1941.

We have traced all recorded cash receipts from the cash book to the record of deposit of funds as indicated by bank statements on file.

An examination of all cancelled checks was made, as to amounts, proper signatures and endorsements. Disbursements through the bank account were verified by examination of vouchers and their approved supporting documents.

The cash on deposit at December 31, 1941, amounting to \$5,222.65, as detailed at the bottom of Exhibit "A" attached, has been verified and found to be correct.

On February 11, 1942, in the Safety Deposit Vault of the First National Bank of Montgomery, Alabama, in company with Dr. Douglas Cannon, we made an examination of the United States Savings Bonds of a maturity value of \$10,000.00, being of Series "C", numbered D459763C to D459782C, both inclusive, each of a maturity value of \$500.00 and maturing in ten years from date of issue, October 1, 1938. All bonds were issued in the name of The Medical Association of the State of Alabama.

We call your attention to the fact that on October 1, 1941 these bonds had a redemption value of \$395.00 each, or a value of \$400.00 over the original purchase price.

Respectfully submitted,

Crane, Harper & Wilson,
By H. C. Crane.

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

SUMMARIZED STATEMENT OF

CASH RECEIPTS AND DISBURSEMENTS

FOR THE CALENDAR YEAR 1941

Exhibit "A"

Balance January 1, 1941:

First National Bank, Montgomery, Alabama		
Current Checking Account	\$ 520.73	
Savings Account #27565	1,081.15	\$1,601.88
		<hr/>
First National Bank, Mobile, Alabama		
Savings Account #108691		2,645.00
		<hr/>
Total Cash at January 1, 1941		\$4,246.88

Cash Receipts:

Association:		
Counsellors	\$1,007.00	
Delegates	553.00	
County Dues	3,713.00	
Interest on Savings Accounts	60.66	
Roster of Association	4.00	\$5,337.66
		<hr/>

Journal:

Advertising	\$4,146.45	
Subscriptions	21.00	
Cuts	19.66	
Journals	4.50	
Refund of Postage	1.00	\$4,192.61
		<hr/>
		\$9,530.27
		<hr/>
		\$13,777.15

Cash Disbursements:

According to detail hereto attached as Exhibit "B"

Association	\$3,122.54	
Journal	5,431.96	8,554.50
Balance December 31, 1941		\$5,222.65

Consisting of:

First National Bank, Montgomery, Alabama		
Current Checking Account	\$1,435.84	
Savings Account #27565	1,102.00	\$2,537.84
First National Bank, Mobile, Alabama		
Savings Account #108,691	2,684.81	
		\$5,222.65

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA
DETAILED STATEMENT OF CASH DISBURSEMENTS
FOR THE CALENDAR YEAR 1941

Exhibit "B"

Association:

Salaries—Dr. D. L. Cannon	\$	600.00	
Printing, Stationery and Office Supplies		87.00	
Postage		94.00	
Expense of Division and Committee Meetings		161.99	
Expense of Annual Meeting:			
Badges	\$	34.04	
Programmes		123.36	
Miscellaneous		12.80	170.20
Expense to American Medical Association		127.92	
Contribution to Division of Medical			
Extension, Tulane University		1,000.00	
Printing and Mailing Transactions Annual Meeting		694.51	
Premium on Treasurer's Bond		50.00	
Auditing Expense		45.00	
Clerical Assistance		3.75	
Safe Deposit Box Rent		6.00	
Projection Equipment		24.74	
Expense, Chairman of the Board		7.75	
Expense, Vice-President Merle E. Smith		38.68	
Refund of Dues		11.00	\$3,122.54

Journal:

Salaries:

Dr. D. L. Cannon, Managing Editor	\$	399.96	
W. W. Wilkerson, Editorial Assistant		300.00	
Luette Kilpatrick, Clerical Assistant		322.50	
Wilhelmine Ohme, Clerical Assistant		37.50	\$1,059.96
Printing, Addressing and Mailing Journals		4,372.00	5,431.96
Total Disbursements			\$8,554.50

Committee of Publication
Fred W. Wilkerson, Chairman

The monthly circulation of the Journal is 1,750 copies, 1,567 of which go to members of the Association, the remainder to non-member subscribers, exchanges, advertisers, advertising agents and the files of the Association.

Receipts from advertising in the calendar year 1941 amounted to \$4,146.45—a slight increase over 1940.

Cost of printing and distributing the Journal totaled \$4,372.00

Sixteen hundred fifty (1,650) copies of the 1941 Transactions of the Association were published and distributed to all members at a cost of \$694.51.

Committee on Public Relations
John A. Martin, Chairman

With our country at war, the responsibility of the medical profession towards the public becomes doubly increased. It becomes necessary for us to care for all citizens in our armed forces and all civilians. Through the American Medical Association, we have pledged ourselves to fulfill this task to a successful conclusion. Ours is a type of service that cannot be carried on by anyone else. We must never lose sight of the fact that we must always give service to the citizens of our country. It is a responsibility which we have accepted and during this emergency it is more necessary than ever that we do our job well.

Now is the time to remember that if a deficiency occurs in medical care for civilians due to the large group of doctors drawn into military service, there will be attempts to correct this deficiency by federal legislation. There are many in America who would welcome an opportunity to promote this legislation. We will be at a definite disadvantage to combat such legislation when so many doctors are away from their communities where their influence is greatest. We must remember when and how the Eighteenth Amendment was passed by Congress.

We are at war with nations whose theory of life is far different from the American way of life. There are many citizens of these countries who are trying to qualify as medical practitioners in this country. Under existing laws, it will be difficult, if not unwise, to force them to serve with our armed forces. I can think of no greater treachery which can be perpetrated on American doctors serving with our armed forces and their families than to leave these foreign born in control of their practices and their families while they are away. It is an unfairness that should be recognized by this Association, and its delegates should be instructed to bring it to the attention of the House of Delegates of the American Medical Association at its next meeting. It is a trust which those who are serving in war leave with those of us who are left at home. To me it is a sacred trust.

Committee on Mental Hygiene
Frank A. Kay, Chairman

During the past year this committee has continued its activities of trying to educate the public as to the needs, the advantages and the possibilities of psychiatry. It is through our public relations that we can accomplish the greatest good. We need the cooperation of the entire medical profession for psychiatric progress will be accelerated or retarded by the attitude of the profession toward this specialty. Up until the past few years psychiatry has not been given much time or consideration in the curricula of the medical schools from which most of our now outstanding physicians came. We know that people are the products of what they are born with and what they have experienced and if some members of the medical profession haven't experienced psychiatry and have been quite busy, as successful physicians are likely to be, then we know that some of our psychiatric problems and information and possibilities may not be known to them.

We do ask them to listen with an open mind to what authoritative psychiatric sources have to say and then to give us all the support that appears justified.

We cannot report the establishment of any new psychiatric clinics. War time economy would not permit the establishment nor the staffing of such clinics even were funds for operation available.

Three of Alabama's all-too-few psychiatrists are now in the service.

Your committee has supplied speakers for parent-teacher association meetings on several occasions and in several cities, and for luncheon clubs in a like manner, and through efforts of its individual members we have kept in close touch with the various welfare and mental hygiene associations of this state. Through this committee Alabama was represented in the mental hygiene section of the American Psychiatric Association in Richmond last May.

The Bryce Hospital continues its demonstration clinics for students of the various institutions of higher learning of the state, and the Medical School of the University of Alabama has added to its curriculum an orientation course on psychobiology and preclinical psychiatry in the sophomore year.

We call attention to the fact that Dr. W. S. Littlejohn of Birmingham, one of the members of this committee, is now in the service of this country.

Committee on Maternal and Infant Welfare
A. E. Thomas, Chairman

During the past year this committee has confined its activities to cooperation with all existing agencies that have for their objective the improvement of maternal welfare. Our State Health Department's Division of Maternal Hygiene, under the able leadership of Dr. Henry W. Clapp, Dr. Eva Dodge, and Dr. J. Newdorp, are rendering commendable service in field work; namely, visiting clinics and teaching both doctor and pa-

tient the highest type of prenatal supervision. Their work for the last year has been primarily a task of supervision. Few new clinics have been organized. Their efforts have been directed toward improvement in the quality of work done in clinics already functioning. There are in the state of Alabama 106 prenatal clinics, seeing on an average of 20 patients daily, and 39,800 visits were made to these clinics last year.

One might ask: What is being accomplished by this effort? Through excellent cooperation of all the counties having maternity clinics in 1941 it is possible to make an estimate of what is being accomplished in the improvement of maternal welfare. There were 52,098 patients delivered in these 48 counties in 1941—31,209 white and 20,889 colored. Of these, 16.5 per cent attended prenatal clinics—33.9 per cent of the colored patients and 5.2 per cent of the white patients.

A study of maternal deaths shows a maternal mortality rate of 45.1 per 10,000 live births. The rate for the white mothers is 27.9, and that for the colored 65.5. These preliminary figures would indicate that the maternal mortality for those counties holding clinics is lower than ever before, especially, for white mothers. In spite of the rising birth rate, the provisional figure for the entire state is lower than ever before in its history.

A study of maternal deaths among clinic patients demonstrates that the rate for them is 27.3 per 10,000 live births. There was only one death among 1,631 white mothers attending prenatal clinics. Obviously, the influence of prenatal supervision is having a stimulating influence upon a large non-clinic group, namely, the group that contacts the doctor for delivery, seeing him earlier and demanding more care. The highest mortality rate is 82.8 for colored non-clinic mothers. This is the group which education and improved facilities for care have not reached. This rate of 82.8 is better than two and one-half times that of the colored mothers in similar circumstances who went to prenatal clinics and had a maternal death rate of 32.4.

The stillbirth rate is very similar to that for maternal mortality, the rate being 36.6 for the clinic group and 59.0 for the non-clinic group. The same conclusions can be made from the estimated stillbirth rate, as has already been demonstrated by the maternal death rate. In comparison, an interesting survey was recently made by the Alabama Obstetrical Society of the hospitals of Alabama for 1939 and 1940. Forty-five hospitals returned completed forms that revealed the following information:

There were 11,421 deliveries, with a maternal mortality of one death in each 150 deliveries in 1939. There were 288 cesarean sections, or one out of each 40 deliveries with a maternal mortality of 14, or one death in each 20 sections performed. The rate for 1940 is even worse. There were 13,041 deliveries with 84 deaths, or one in each 147 deliveries. There were 332 sections with 11 deaths, or one in every thirty-three deliveries. Apparently, cesarean section continues to be a very hazardous experience in most of our hospitals. Forty-five hospitals out of seventy-two in Alabama give one a fair example of what

is happening in our state. Would you want your wife or daughter to face the scalpel, realizing that she had one chance in twenty? That is the picture in Alabama. It is dangerous enough to let her have a baby in a hospital in Alabama when it is known that she faces one chance of death in every 147 deliveries. The answer is conservatism. If it were possible to stay the hand of the anxious operator in Alabama, maternal mortality would command the respect of other states.

We have no new recommendations to make. We wish to thank you for your cooperation in the past. We face the future with depleting ranks, but with a firm conviction that with your cooperation we can lower still further the maternal mortality in Alabama, remembering the defense of mothers is the defense of the nation.

Committee on Cancer Control

J. P. Chapman, Chairman

During the past year, 1941, the activities of the Committee on Cancer Control have been largely devoted to an educational campaign. The slogan, "fight cancer with knowledge," has been emphasized wherever the opportunity presented itself.

The committee has held two meetings, with all members present, and has also met with the executive committee of the Woman's Field Army in two sessions. Each member of the committee has been called upon many times for talks before medical groups, civic organizations, and women's clubs, discussing various phases of cancer, especially emphasizing the early manifestations of the disease. In each issue of the State Medical Journal there has appeared a communication from the cancer control committee, keeping prominently before the physicians of the state the problem of cancer. The State Department of Health also has given out many articles to the press, and presented many radio talks dealing with cancer as a health problem.

A very important phase of the educational program has been the showing of a sound-film "Choose To Live" in various parts of the state. This film was made by the American Society for the Control of Cancer, and in our state has been shown to thousands of people by representatives of the State Department of Health, County Health Officers, and other agencies. Credit is not taken by the cancer control committee for the presentation of this film, but the committee does appreciate the tremendous educational value of this activity in the general campaign for the early recognition of symptoms and signs of cancer. This film may be used in any county, with adequate equipment for showing it, and may be secured through the State Department of Health, or direct from the American Society for Cancer Control in New York.

Our most effective agency in the educational campaign against cancer comes is the Women's Field Army, the state organization representing the American Society for Control of Cancer. This organization has rendered invaluable assistance in other states where it is operating, and is already showing hopeful indications of similar

work in our state. The Alabama Women's Field Army, although struggling along for four years through the earnest efforts of pioneer state commanders, has now taken on new life under the activity of Mrs. T. M. Francis, of Birmingham, who was appointed as state commander in December 1941. The organization includes each congressional district, every county, and is planning to cooperate with the national proclamation making the month of April the time for an intensive campaign in the education regarding cancer facts, and enlisting men and women in the fight against cancer. The goal of enlistment is one to every one hundred in population. It is hoped that at least 5,000 individuals will contribute one dollar to the cancer fund. Most encouraging signs point to a successful drive in Jefferson county, and many other counties as well.

The State Department of Health has generously contributed five hundred dollars (\$500.00) to meet the expenses of the state wide activity of the Women's Field Army. The returns from this investment are incalculable, because the women of the state are showing remarkable enthusiasm in their fight against cancer, the second greatest public health enemy.

CANCER CLINICS

The immediate problem is the establishment in different parts of the state of clinics where victims of cancer may be referred for adequate treatment. There are only two recognized cancer clinics in the state, both in Jefferson county, but they are a private clinic and a county clinic. Cancer can be and is being adequately treated in several sections of the state by private groups, and until cancer clinics can be established, the committee must make some arrangement with these private groups to take care of the indigent cancer patients insofar as is possible. The calls coming to the committee are increasing, and funds should be available for transporting and maintaining such patients while being given the needed treatment. At the present time, some of the welfare agencies will help to a limited degree.

The cancer clinic, before being recognized as such, must conform to the requirements of the American College of Surgeons, which are certain staff members, a surgeon, roentgenologist, pathologist, having available 100 mgms. of radium, and a 200,000 volt x-ray machine. The committee would like to encourage the formation of such clinics in certain sections of the state.

LEGISLATIVE APPROPRIATIONS

The cancer committee feels that it is time to set in motion a movement for securing a legislative appropriation for carrying out the cancer control program. The state of Georgia has in recent years provided an annual appropriation of \$50,000 which is used by the cancer committee for treating indigent cancer patients. The average cost of treatment per patient has been about \$50. The results have been most gratifying. With a death rate of 2,000 last year, there are 6,000 patients with cancer living, and many of them not able to pay for treatment. The enthusiasm of

the Women's Field Army over the need for doing more than talking about cancer prevention has taken the shape of urging an appropriation at the next session of the legislature. The committee believes it desirable that the State Board of Health should have such a bill drawn up, fashioned after the Georgia bill, so that it may be introduced at the appropriate time.

Committee on Prevention of Blindness and Deafness

B. Frank Jackson, Chairman

It is not known to this Committee that a great deal is being done in the field of deafness prevention. In the prevention of blindness, however, work continues apace and much progress is noted. Thus the State Department of Health prepared and distributed in 1941 sixty-five thousand ampules of silver nitrate for use by physicians and midwives in the prevention of ophthalmia neonatorum. Further, through educational campaigns, engaged in by the state's several county health departments, people are being warned of dangers to the eyes attendant upon the venereal diseases, notably gonorrhea. Alabama's Aid to the Blind program continues to function in a worthwhile way. Average number of aid to the blind cases in the state ranges from one to eighty-six in the fiscal year that ended September 30, 1941, and the average grant made to cases varied from \$5.37 per month to \$19.77. It will be clear that extending aid to the blind is comparable to locking the stable after the horse has been stolen. Whatever is being done now looking to the prevention of blindness should be continued and added efforts exerted in order that there may be a decrease in the number of those denied the right to see.

Committee on Postgraduate Study

Ralph McBurney, Chairman

Courses in gynecology and non-operative surgery, instituted last year, have continued under supervision of Dr. K. W. Kostmayer of the Division of Medical Extension of the Tulane University of Louisiana, with the following lecturers from the same institution: Drs. Conrad G. Collins, E. Perry Thomas, Warren H. Herbert, Howard Mahorner, Neal Owens and Michael DeBakey.

CENTERS COVERED

From March 31, 1941 to February 27, 1942 sixteen centers have been covered as indicated below:

Camden	Tuscumbia
Selma	Russellville
Guntersville	Cullman
Decatur	Jasper
Gadsden	Tuscaloosa
Huntsville	Demopolis
Scottsboro	Clanton
Florence	Dothan

There were 211 physicians in attendance, of whom 200 paid the usual fee of \$5.00 for the series of lectures and clinics.

CHANGE IN SCHEDULE

It was found by experience that, instead of covering two or three centers in a month as heretofore, it was better to take three successive months for the six instructors to complete the same, thus avoiding the crowding of so much information into such a brief space of time, hence not accomplishing the purpose for which the course was designed. Therefore, this change was put into effect beginning with Clanton. This spacing arrangement eliminated consecutive nightly meetings and made it more convenient for physicians in attendance with the added probability of increased and more regular attendance.

RESULTS OF QUESTIONNAIRES

In order to get the reactions of the physicians attending these courses and to receive their suggestions for improvement, etc., questionnaires were sent out from the office of the Director of Courses, Dr. Kostmayer. The following tabulation, furnished by him, of replies received from the centers covered in the courses of gynecology and surgery presents an interesting cross section of individual evaluation.

The committee feels that suggestions and criticisms will prove very helpful in planning future courses. We therefore urge those who attend the courses to reply to questionnaires when received.

No. questionnaires sent out	174
No. questionnaires returned	101
Lectures:	
Excellent	70
Good	26
Fair	2
Poor	0
Clinics:	
Excellent	30
Good	6
Fair	8
Poor	2
Was course worth time spent?	
Yes	99
No	1
Do you like meetings held each evening?	
Yes	87
No	13
Features of course especially valuable:	
Everything	16
Lectures	11
Discussions	11
Practicality	7
Gynecology	5
Lantern slides	4
Surgery	2
Consultations	2
Clinics	3
Manner of presentation	3
General refresher	3
Qualifications of lecturers	2
Improved diagnostic methods and treatment	1
New material and refreshing of old	1
Modern treatment of conditions discussed	1
All meet the requirements of rural practice	1
Personal questioning	2
Lecture on hormones	2

Lecture on endocrinology	1
Lecture on cancer of the uterus	
(Dr. Thomas)	1
Diagnosis and treatment of ectopic gestation	1
Burns	1
Features that applied to general practice	1
Promptness of beginning and closing	1
Weak features of course:	
None	47
Clinics	12
Consultations	3
Surgery lectures	2
Marked lack of cooperation on part of local physicians	1
Too much statistical data	1
Not practical for general practitioner	3
No adverse criticism	1
Nightly meetings too strenuous and too time consuming for those who do not live nearby	1
Lectures very elemental	1
Overtime—due partly to presentation of statistics	1
Too many subjects for evening, making lectures too long	1
Too few lectures	1
Doctors attending should be encouraged to bring some cases pertaining to the lectures given	1
Suggestions for improvement of courses:	
No suggestions	21
More courses	12
More clinical demonstrations	8
Have lecturers give more time for consultations	4
Have lectures more adapted to country practice	2
Improve attendance	2
Better cooperation of local physicians	1
More surgery lectures	1
Have two or three nights a month	1
Have meetings held semi-weekly	1
Have longer lectures	3
Have lectures two nights each week	1
Have lecturers be in a town two or three days for nightly lectures	1
Have more intensified lectures	1
Complete lecture as scheduled before opening discussion	1
Send out pamphlets covering each lecture	1
Give a certificate after course is completed	1
Cover no more than one subject in an evening	1
Lecture once a week	1
Continuity of subjects for next course and at least twice as many lectures	1
Would you be interested in future courses:	
Yes	99
No	0
Suggested subjects for future courses:	
Pediatrics	32
Obstetrics	27
Medicine	22
Gynecology	7
Surgery	7
Emergency minor surgery	1
Operative clinics	1
Surgical technique with slides and short movies	1

Anything for general practice	7
Anything pertaining to rural and semi-rural practice	1
Same subjects again	3
Skin diseases	3
Disease of the chest	1
Pneumonia	1
Disease of the heart	2
Kidney	1
Dislocations	1
Vitamin deficiency	1
Drug therapy	1
New therapeutic agents	1
Genito-urinary	1
Urology	2
Parasitology	1
Hematology	1
X-ray	1
Cancer	1
E. E. N. T.	2
Gallbladder	1
Gastro-enterology	1
Orthopedics	1
Proctology	1
Neurology	1
*Questionnaires from Dothan not yet received due to lack of intervening time.	

APPROPRIATIONS

Grateful acknowledgment is made of the continuation of the annual appropriation for postgraduate study for the next three years, which was allowed by the Association at the last annual meeting.

Your committee pledges its further support and earnest efforts with the aid of the other cooperating agencies, the State Department of Health and Division of Medical Extension of Tulane University, to make every effort to present the type of postgraduate instruction that will meet the needs of the Association membership.

Committee on Accidents and Industrial Hygiene

H. Earle Conwell, Chairman

As Chairman of your Committee on Accidents and Industrial Hygiene, I am pleased to report that every effort has been made in the past year to make contact with as many individuals as possible in the state in order to bring about an improvement in giving proper first aid to the injured.

Following your approval we had a series of articles published under the heading of Let Them Lie, a Manual of First Aid for Motorists. These articles appeared last year consecutively for twenty-three days in six daily newspapers in Alabama. The response from the public was very encouraging and we feel that much benefit was derived from same.

It is needless to emphasize how important such information is during the present national emergency. The articles were compiled through the aid of the Bureau of Health Education and Publicity of the Jefferson County Board of Health and arranged by the Alabama Writers' Project, WPA, and printed by the Public Health Education Project, WPA.

Much credit is to be given Mrs. Margaret Putman who is a member of the editorial staff of the Birmingham Age-Herald for her aid in editing the original articles as presented in the newspapers; also due thanks and appreciation are given the Birmingham News and Age-Herald for their cooperation in originally publishing the articles.

Committee on Archives and Medical History M. Y. Dabney, Committeeman

Despite the depressing effects of the greatest world war of all time, the recording of medical history in Alabama has not been at a standstill.

Your committee is happy to report that Prof. Emmett C. Carmichael of the Department of Physiologic Chemistry of the State University has published further chapters of his Biographies of Alabamians Who Have Been Presidents of the American Medical Association.

In Jefferson County, the Health Department has engaged the Writers' Division of the PWA to write A History of Public Health in Jefferson County, Alabama, which is in effect a history of medicine in that county. Judging from the first three chapters, the book promises to be most interesting.

A storehouse of information and data for the above project should be the twelve-volume diary of the late Doctor Thomas D. Parke of Birmingham, who founded the Jefferson County Health Department and was one of the founders of the Children's Hospital. Doctor Parke was the first specialist in pediatrics in Alabama and one of the first in the South. It is hoped that Mrs. Parke will edit and publish this diary in a condensed form.

Your committee recommends the appointment of two additional members of this committee with power to arrange for the writing of a history of medicine in Alabama.

Afternoon Session, Tuesday, April 21

2:00 P. M.

SECTION ON MEDICINE

Dr. Clarence Weil, Montgomery, Chairman
Dr. D. J. Long, Montgomery, Secretary

Dr. Ralph McBurney, Tuscaloosa, presented a paper entitled A Clinical Evaluation of the Erythrocyte Sedimentation Rate which was discussed by Dr. Clarence Weil, Montgomery, and Dr. George S. Graham, Birmingham.

Dr. I. Milton Wise, Mobile, read a paper on The Preparation of Human Plasma—Its Use in the Treatment of Shock.

Dr. H. B. Burdeshaw, Dothan, next dealt with Blood and Blood Substitutes in the Treatment of Hemorrhage and Shock.

The papers of Drs. Wise and Burdeshaw were discussed by Dr. A. C. Jackson, Jasper, and Dr. O. N. Edge, Troy.

Dr. J. O. Finney, Gadsden, presented a paper on Peptic Ulcer—Analysis of 188 Cases with Special Reference to Hemorrhage, and it was discussed by Dr. E. Dice Lineberry of Birmingham and Dr. B. Cosby Bird of Montgomery.

Dr. Frank A. Kay, Tuscaloosa, read a paper on Electro-Shock Treatment in Psychiatric Disorders, which was discussed by Dr. W. D. Partlow, Tuscaloosa.

SECTION ON SURGERY

Dr. H. S. Bartlett, Montgomery, Chairman
Dr. Claud Johnson, Montgomery, Secretary

1. Dr. P. P. Salter, Eufaula, presented a paper on Intestinal Obstruction, discussed by Dr. A. C. Jackson, Jasper; S. G. Latiolais, Dothan, and Dr. Brannon Hubbard, Montgomery.

2. Dr. W. Nicholson Jones, Birmingham, gave A Case Report of Benign Ovarian Tumor, with Bilateral Hydrothorax and Ascites, which was discussed by Dr. E. L. Gibson, Enterprise; Dr. K. E. Luckie, Selma, and Dr. Gilbert Douglas, Birmingham.

3. Dr. French H. Craddock, Jr., Sylacauga, read a paper on Intravenous Alcohol in Postoperative Analgesia, discussed by Dr. Luther Davis, Jr., Tuscaloosa, and Dr. W. F. Harper, Selma.

4. Dr. Louise Branscomb, Birmingham, presented a paper on Primary Dysmenorrhea.

5. Dr. W. C. Simpson, Gadsden, read a paper on The Surgical Treatment of Dysmenorrhea.

The papers of Drs. Branscomb and Simpson were discussed by Drs. M. Y. Dabney and Gilbert Douglas of Birmingham.

6. Dr. Erskine Chenault, Decatur, read a paper on Practical Factors in Spinal Anesthesia which was discussed by Dr. Joe D. Wilson, Birmingham.

Evening Session, Tuesday, April 21

8:00 P. M.

SECTION ON PEDIATRICS

Dr. W. R. Britton, Montgomery, Chairman
Dr. J. Sam Smith, Montgomery, Secretary

1. Dr. Frank C. Wilson, Birmingham, presented a paper on Surgical Treatments in Children, discussed by Dr. D. F. Talley, Birmingham.

2. Charles B. Bray, D. D. S., Birmingham, read a paper on Problems of the Teeth and

Gums which was discussed by Dr. J. W. Britton, Anniston.

3. Dr. Andrew L. Glaze, Birmingham, read a paper on Treatment of Skin Diseases in Children, discussed by Dr. C. O. King, Birmingham.

4. Dr. Bessie Mae Beach, Montgomery, discussed Progress in Pediatrics, with Special Consideration of the Newer Sulfonamide Drugs.

SECTION ON EYE, EAR, NOSE AND THROAT

Dr. B. F. Jackson, Montgomery, Chairman
Dr. Paul Mertins, Montgomery, Secretary

1. Dr. Grady E. Clay, Atlanta, discussed Convergent Squint.

2. Dr. H. W. Frank, Gadsden, read a paper on the Use of Sulfonamides in Acute Otitis Media and Acute Mastoiditis, discussed by Drs. E. W. Rucker and Gilbert Fisher, Birmingham.

3. Dr. Ralph Clements, Tuscaloosa, presented A Newer Treatment for Perennial Hay Fever, which was discussed by Drs. Marion Davidson and E. W. Rucker, Birmingham, and Dr. Harvey Searcy, Tuscaloosa.

4. Dr. N. E. Miles, Birmingham, read a paper on A Previously Undescribed Allergic Keratitis—With Report of Cases, discussed by Drs. L. M. Walker and Ralph Clements of Tuscaloosa, and Dr. H. W. Frank, Gadsden.

Second Day, Wednesday, April 22

8:30 A. M.

GENERAL SESSION

1. Dr. J. B. McLester, Birmingham, read a paper on The Treatment of Heart Disease without Special Technical Equipment.

2. Dr. Walter F. Scott, Birmingham, discussed Injuries of the Urinary Tract.

3. Dr. Edward Compere, Chicago, presented a paper on The Treatment of Compound Fractures.

4. Dr. Frank E. Adair, New York, discussed Carcinoma of the Breast.

5. At this point, the Association paused to honor the memory of Alabama's late State Health Officer, Dr. J. N. Baker, the speaker of the occasion, Dr. E. V. Caldwell, Huntsville, addressing the Association as follows:

IN MEMORIAM
DR. J. N. BAKER

Mr. President, Members of The Medical Association of the State of Alabama, and Guests:

Every year when this Association meets there are faces missed from among us, never to be seen again. Voices have been silenced, never to be heard again. Personalities we loved, gone.

In their passing all of these have left the imprint of their lives on those who knew them—and are not dead in the true sense, but still live in the hearts and memory of those who knew and loved them, remaining a benediction to all whom they contacted in this life.

In the medical profession, better than in any other, is it given to man to be a blessing even to this degree.

But there are those missing from among us today who have lived a fuller life and left a greater and larger imprint on the lives of those living, and through their multiplicity of fields of endeavor have been privileged to lead in work that will bless and improve generations to come, assisting them to a better plane of living and happiness than those who lived before them. Such a man must be educated in many fields, must be cultured to a sensitive degree, must have a great breadth of understanding and comprehension, and must know the history of the past, and be able to extract its lessons and apply them to the future benefit of mankind. He must be able to dream dreams for generations unborn. He must be able to keep his head when others around him have lost theirs. He must be adamant for the right and be able to stand alone when necessary. He must love *mankind* and love his work for mankind. He must not seek his reward here, but must await his reward hereafter. In such a man's heart there must have been a song of joy in this life and hosannas in the next. Such a man was Dr. J. N. Baker, and I ask the Association to stand a moment in silence in his memory.

6. The Jerome Cochran Lecture was delivered by Dr. Harvey B. Stone of Baltimore, his subject being Biliary Diseases as Seen by the Surgeon.

7. Dr. C. L. Rutherford, Mobile, read a paper on Carcinoma of the Uterus.

MISCELLANEOUS BUSINESS

Vacancies in counsellorships were announced by the Secretary.

Dr. W. D. Partlow introduced a resolution to be found in the proceedings of Thursday morning.

Afternoon Session, Wednesday, April 22

2:00 P. M.

GENERAL SESSION

1. Dr. Hughes Kennedy, Jr., Birmingham, read a paper on The Effects of Obstetric Sedation and Anesthesia on the Newborn.

2. Dr. S. L. Ledbetter, Jr., Birmingham, discussed Wound Healing and Wound Closure.

3. Dr. Fred Wilkerson, Montgomery, in his paper, related Some Errors in the Treatment of Hypertension.

4. Dr. M. S. Davie, Dothan, read a paper on Peptic Ulcer.

5. Dr. Brannon Hubbard, Montgomery, discussed Safety in Intestinal Surgery.

6. Dr. Clarence R. Bennett, Eufaula, read a paper entitled Heart Disease in Pregnancy.

7. Dr. Frank W. Pickell, Brewton, presented a paper on Fractures of the Upper Humerus—Advances in Treatment.

Evening Session, Wednesday, April 22

8:00 P. M.

GENERAL SESSION

1. Dr. J. H. Dodson, Mobile, discussed Some of the Anatomic Structures Dealt With in Treating Anorectal Diseases.

2. Dr. Ralph Benson read a paper on the Management of the Third Stage of Labor.

3. With Dr. John W. Simpson of Birmingham presiding, a panel discussion of Poliomyelitis was engaged in by Dr. D. G. Gill, Montgomery (Epidemiology), Dr. A. E. Casey, New Orleans (Pathology), Dr. C. A. Grote, Huntsville (The Acute Stage), and Dr. Earle Conwell, Birmingham (Orthopedic Management).

MISCELLANEOUS MATTERS

During the course of the session, motion pictures were shown embracing the following subjects: Thyroidectomy in Toxic Goiter (courtesy, Dr. Harold L. Foss, Geisinger Memorial Hospital, Danville, Pa.); Congenital Pyloric Obstruction (courtesy, Dr. Guy W. Horsley, Richmond, Va.); Pansinusectomy (courtesy, Dr. William A. Wagner, New Orleans); Cancer of the Female Breast (by Frank E. Adair, courtesy, Davis and Geck, Brooklyn, N. Y.); The Technique of a Modern Hemorrhoidectomy (Dr. J. E. Linn, Birmingham).

Doctors' wives, local and visiting, were entertained at a luncheon at the Blue Moon Inn on Wednesday the 22nd.

The host society entertained the Association at a reception and dance at the Beauvoir Country Club, Wednesday night.

(To be concluded)

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF LABORATORIES
Samuel R. Damon, Ph. D., Director

SPECIMENS EXAMINED

MARCH 1942

Examinations for diphtheria bacilli and Vincent's.....	698
Agglutination tests (typhoid, Brill's, undulant fever)	543
Typhoid cultures (blood, feces and urine)	476
Examinations for malaria	810
Examinations for intestinal parasites	2,373
Serologic tests for syphilis (blood and spinal fluid)	39,974
Darkfield examinations	38
Examinations for gonococci	2,036
Examinations for tubercle bacilli	2,017
Examinations for Negri bodies (microscopic)	71
Water examinations (bacteriologic)	890
Milk examinations	1,813
Pneumococcus typing	7
Miscellaneous	774
Total	52,520

BUREAU OF PREVENTABLE DISEASES
D. G. Gill, M. D., Director

CASE-FINDING IN TUBERCULOSIS
EFFORTS BEING STEPPED UP

On the tuberculosis front in this state continuous case-finding tactics are being pursued and offensive tactics are being resorted to in order that further reduction in the death rate as well as the incidence of this disease may be achieved. According to the latest provisional figures now available, 1,473 persons died of this plague last year, a reduction of 34 from the preceding year 1940.

The four traveling x-ray clinics held a total of 596 one-day clinics during 1941. There were 12,052 x-ray examinations and reexaminations which, when broken down into results as to findings, revealed that 2,058 were positive for pulmonary tuberculosis; 380 were diagnosed as suspects only; 185 were found to have pulmonary pathology other than tuberculosis; and 9,386 were declared negative for pulmonary pathology. A few diagnoses were deferred until x-rays could be made again. Considerably more chest pathology was found than was reported as this factor is not consistently recorded statistically.

Because of the loss of personnel it was found necessary to discontinue one of the traveling x-ray units in October. In readjusting the schedules for the three remaining portable x-ray units, less frequent one-day assignments were accorded the counties in the lower incidence areas, while fairly frequent one and two-day clinics were continued in the areas known to have major tuberculosis problems.

The chest x-ray examinations being done by the military organization of all selectees passing through the induction centers is just beginning to be reflected on our case-finding efforts. A small number of rejectees are being returned to their homes because of x-ray findings of pulmonary tuberculosis. The fact that the induction centers are reporting these cases to the State Health Department as well as the local boards is of inestimable value. The local health office staffs are being urged to have these boys x-rayed the next time a traveling unit is in their community. The cases are thus classified and, if the findings warrant hospitalization, every effort will be made to get local help to finance the necessary sanatorium care. These cases will also give the local health office staff a further problem in searching out the contacts for x-raying and in attempting to locate the source of infection. The number of cases picked up by the military induction service will be a commentary on the effectiveness of the local health unit's case-finding program.

BUREAU OF MATERNAL AND CHILD
HEALTH

J. S. Hough, M. D., Acting Director

CONSERVING THE HEALTH OF CHILDREN

The following statement is based on the recommendation of the White House Conference on Children in a Democracy:

The health and well-being of children depend to a large extent upon the health of all the members of their families. The following public maternal and child health services should be provided as rapidly as possible through the cooperation of federal, state, and local governments, so that through public funds, if private care is not

available, there may be for every mother and child:

1. Good prenatal care and care in childbirth by a qualified physician, public health nursing and delivery nursing care, with dental, nutrition, and social services as needed, and hospital care in an approved hospital when required.

2. Medical and nursing supervision of newborn infants, with special care for the premature.

3. Health supervision throughout infancy and childhood.

4. Health instruction in schools and health education of parents.

5. Effective nutrition services and mental health service when needed.

6. Medical care for sick children in home, clinic, office, hospital, or convalescent home.

7. A broad program of education to enlighten citizens in all aspects of health and medical care for mothers and children.

BUREAU OF SANITATION

D. S. Abell, M. S. in S. E., Director

DOMESTIC WATER SUPPLIES OTHER THAN PUBLIC SUPPLIES

By

Arthur N. Beck, B. S., M. S.
Assistant Sanitary Engineer

The increasing number of requests from schools and individuals for information in regard to small domestic water supplies, with particular reference to ways and means of securing and protecting water supplies, is an indication of the growing consciousness of this subject by the general public in Alabama. Realizing this, a rough draft of a bulletin entitled "Domestic Water Supplies Other Than Public Supplies" has been prepared by the Bureau of Sanitation as a supplement to the bulletin, "Private Wells and Springs," used by the department for a number of years.

The first few pages of the proposed bulletin are devoted to water in general. It was thought that this phase would be of interest particularly to school children studying water as it occurs in nature. Although the subject is a broad and technical one, it is condensed and presented as nontechnical as possible. An effort has been made to trace the cycle of water from its precipitation back to water vapor as it occurs in clouds and the atmosphere. In tracing

natural water through nature's cycle, it is explained in a simple manner how precipitation occurs, how and when the precipitated water is disposed of, how water picks up chemicals and organic constituents, and how water from open unprotected wells is contaminated. The classifications of ground waters are also given.

Following the relatively brief consideration given to the fundamentals of the occurrence of water, a discussion of the location and protection of water supplies is included. The danger of locating wells, especially shallow dug wells, in built-up or congested areas, or near privies, cesspools and sewers is pointed out. Flood danger, limestone areas, wasting of ground water by overflowing wells, and abandoned wells are also discussed.

The next item given consideration is the development and protection of water supplies. Dug, bored, drilled and driven wells are discussed, together with spring and cistern supplies. Under each of the above types of supplies is included a brief outline of construction methods illustrated with drawings.

After any type of well is made, it is not properly protected and will not be a source of satisfaction if the method of raising the water to or above the surface is inadequate and improperly installed. It is the consensus of health authorities that direct lift, chain lift, bucket type, and pitcher or slotted top pump are not satisfactory and should not be installed. A general description of pumps and their installations is given in the bulletin referred to.

If, after the construction of a water supply, bacteriologic analyses are to indicate a safe water, the system should be sterilized. This procedure is usually necessary as the water becomes contaminated during construction. Suggested methods of sterilization conclude the proposed bulletin.

Knowing that material in final forms cannot be prepared in an office to suit or fit all field conditions in the sixty-seven counties of the state, the preliminary draft has been sent to all the county health departments asking that they review it and offer their constructive criticisms and suggested changes and additions. It is proposed to revise the work and incorporate as many of the suggested changes as possible just as soon as the criticisms are submitted. It will then be ready for general distribution.

BUREAU OF VITAL STATISTICS

Leonard V. Phelps, S. B. in P. H., Director

DIVORCES IN 1940

A review of final figures for divorce in 1940 reveals some interesting facts.

There were 4,417 divorces reported in Alabama in 1940, a marked increase over the number reported in 1939 (4,145) and in 1938 (3,714). The wife was the complainant in 3,046 (69.2 per cent) of the cases; the husband in 1,355 (30.8 per cent). Since state laws do not require that the specific age and color of the parties involved be stated on the bill of divorce, and an attempt by the State Health Department to have the law changed failed to secure favorable action, data of this nature are not available.

Each year since 1938, when divorce statistics were first tabulated for Alabama, abandonment has been the leading cause of divorce. In 1940, abandonment, alone, was responsible for 1,851 (42.0 per cent) divorces—in combination, for 1,899 (43.1 per cent). Again, cruelty was second in order; alone it was responsible for 1,691 (38.4 per cent) divorces; in combination, 1,724 (39.2 per cent). Adultery was third in order; alone, 389 (8.8 per cent); in combination, 405 (9.2 per cent). Fourth in order was drunkenness, given as cause of divorce in 311 (7.1 per cent) cases. In combination with other causes, drunkenness was responsible for 331 (7.5 per cent) divorces. Non-support was fifth in order; alone it was responsible for 29 (0.6 per cent) of the divorces; in combination for 64 (1.4 per cent).

During the three-year period, 1938-1940, abandonment and cruelty, combined as single causes, were responsible for eight out of ten divorces. Either abandonment, cruelty, drunkenness, adultery, or non-support was given as the cause for 97 of each 100 divorces.

When abandonment was the only ground given as the cause of divorce, the husband was the complainant in 53.8 per cent of the cases; in 61.9 per cent when adultery was the only ground. Of the divorces granted on grounds of cruelty, the wife was the complainant 98 times out of every 100 cases; she was the complainant in 83.5 per cent of the cases where drunkenness was charged.

The above tabulation was prepared from the divorce records. However, the ground stated in the report of the divorce may not

always have been the ground upon which the complainant sought the divorce. Cross bills were filed and the divorce was sometimes granted on the ground stated therein rather than on that of the complainant. To what extent this was the case is not known because only the ground upon which the divorce was granted is recorded. The number of cross bills introduced was comparatively small, and, therefore, the ground recorded for the divorce was, in general, that stated by the complainant.

Testimony was given by the wife more than twice as often as by the husband. When the husband was the complainant, he, alone, gave testimony in 94.0 per cent of the cases; the wife, alone, in 2.1 per cent and both in 3.8 per cent. On the other hand, when the wife brought the complaint, she, alone, gave testimony in 97.6 per cent of the cases; the husband, alone, in 0.3 per cent, and both in 2.0 per cent.

The divorce was granted to the wife in 58.5 per cent of the cases; to the husband in 23.8 per cent; and to both in 17.7 per cent. In cases where the husband was complainant, he was granted the divorce 76.4 per cent of the time; the wife, 2.2 per cent; and both, 21.5 per cent. Of the divorces in which the wife brought the complaint, 83.6 per cent was granted the wife; 0.4 per cent, the husband; and 16.0 per cent, both. In the one instance in which both brought complaint, the divorce was granted to both.

In eight out of ten divorces when alimony was asked, it was granted to the wife. Alimony was granted in 24 cases when it had not been asked.

Information concerning alimony was available in 1,087 divorces in which the husband was the complainant. Alimony was asked in 62 of the cases and granted in 51. It was granted in five of the 1,025 cases in which it was not asked.

In 2,651 of the divorces where the complaint was brought by the wife, information concerning alimony was available. Alimony was asked in 459 cases, granted in 367. Sixteen times out of 2,192 divorces, alimony was granted without being asked.

The interval between marriage and divorce was known for 4,246 divorces. More than one-half of these marriages terminating in divorce did so within six years of date of marriage. As in 1939, more divorces (about one out of ten) occurred during the

third year of marriage than during any other single year. Following the third year, the per cent decreased progressively. Almost two out of three divorces granted were to couples who had been married less than ten years.

The per cent of divorces granted on grounds of cruelty, as a single cause, to couples whose marriages lasted less than one year was 13.4, whereas the per cent from adultery was 9.1; drunkenness, 8.2; and abandonment, 0.7. More than one-half of the divorces granted because of cruelty alone were to those married less than five years. Similarly, from either drunkenness or adultery, less than six years; abandonment, less than ten years.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA 1942

	Feb.	Mar.	Estimated Expectancy Mar.
Typhoid	3	7	9
Typhus	21	10	11
Malaria	49	44	81
Smallpox	3	2	4
Measles	550	1102	1026
Scarlet fever	91	89	56
Whooping cough	77	95	153
Diphtheria	37	19	48
Influenza	2472	1275	2477
Mumps	205	290	187
Poliomyelitis	1	4	2
Encephalitis	0	0	2
Chickenpox	268	251	222
Tetanus	0	3	4
Tuberculosis	183	191	224
Pellagra	9	3	19
Meningitis	5	6	11
Pneumonia	666	435	814
Syphilis	1089	1309	1357
Chancroid	18	19	7
Gonorrhea	483	341	316
Ophthalmia neonatorum	2	0	2
Trachoma	0	0	0
Tularemia	3	1	2
Undulant fever	1	0	2
Dengue	0	0	0
Amebic dysentery	0	2	0
Cancer	148	130	0
Rabies—Human cases	0	0	0
Positive animal heads	19	29	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

Book Abstracts and Reviews

The Toxemias of Pregnancy. By William Joseph Dieckmann, M. D., Associate Professor of Obstetrics and Gynecology, the University of Chicago; Attending Obstetrician, The Chicago Lying-in Hospital, and Dispensary; Attending Gynecologist, Albert Merritt Billings Memorial Hospital of the University of Chicago; Associate Editor of the American Journal of Obstetrics and Gynecology; Co-Chairman of the Conference on Eclampsia, United States Department of Labor, Children's Bureau, 1941. Cloth. Price, \$7.50. Pp. 521. St. Louis, Missouri: The C. V. Mosby Company, 1941.

This is a most welcome book, coordinating and interpreting the voluminous mass of accumulated

material in the literature relating to the toxemias of pregnancy. It was written "To acquaint the obstetrician with some of the recent contributions on physiology pertaining to obstetrics and to acquaint the investigator interested in obstetrics with some of the physiology and pathology of obstetrics." The author more than fulfilled these objectives.

Dr. Dieckmann has divided his book into six sections. These are: I. Classification, Incidence and Pathology of the Toxemias of Pregnancy; II. Normal and Abnormal Physiology; III. The Etiology of Eclampsia; IV. Clinical Aspects of the Toxemias of Pregnancy; V. The Treatment of the Toxemias of Pregnancy; and VI. Maternal and Fetal Prognosis and Prenatal Care.

His discussion of the classification takes into account that preeclampsia and eclampsia are peculiar to pregnancy and separate entities from essential hypertension and vascular renal disease. He presents the classification of toxemias of pregnancy of the American Committee on Maternal Welfare.

He gives much of his own observation on the pathology of toxemia, placing greatest stress on that of the liver and kidneys, concluding that "Periportal hemorrhages and necrosis of the liver are found only in pregnant and puerperal patients, usually in association with eclampsia." Color and microphotographs of a typical eclamptic liver are included.

The section on physiology is the largest, covering the normal physiology of pregnancy and its alterations in relation to the toxemias. The field of biochemistry, as it applies to the above, is well summarized and discussed along with a presentation of the related physiology of the liver, kidneys, vascular system, placenta and endocrine glands. He gives his own conclusions based on his great wealth of personal experiences concerning the above and other aspects of toxemia.

The factors influencing eclampsia are listed and interpreted in the section on etiology. However, the effects of high protein diet as presented by Strauss and Harden, the placental infarct theory of Bartholomew, and the endocrine alterations of toxemia reported by Smith and Smith are dealt with in the section on physiology.

The treatment of eclampsia and preeclampsia is still unsettled and will remain so until the etiology of the condition is known. However, contributions have been made to the treatment of toxemia resulting in lowered maternal and infant mortality. Some of these commented upon by Dr. Dieckmann are adequate prenatal care, low sodium intake, the conservative treatment of Stroganoff, tempered by conservative and timely interruption of the pregnancy, the employment of sedatives, particularly magnesium sulphate, to control convulsions and reduce the blood pressure, and the utilization of hypertonic glucose solutions. Dr. Dieckmann states that "The proper use of hypertonic solutions of glucose in pregnancy is one of the outstanding accomplishments of obstetrics." The Obstetric Treatment of Eclampsia (Chicago Lying-in Hospital) which has resulted in a remarkably low maternal and infant mortality is given in detail.

In reading the last section on maternal and fetal prognosis and prenatal care it is gratifying to note the progress that has been made in the control of the toxemias and it is hoped that the near future may bring solutions for the many problems pertaining to them.

H. W. C.

Papers of Wade Hampton Frost, M. D.: A Contribution to Epidemiological Method. Edited by Kenneth F. Maxcy, M. D., Professor of Epidemiology, School of Hygiene and Public Health, Johns Hopkins University, Baltimore. Cloth. Price, \$3.00. Pp. 628. New York: The Commonwealth Fund, 1941.

It is impossible to offer a comprehensive review of this book which is in fact a review of Dr. Frost's contributions to the field of epidemiology. No preceding collection of Dr. Frost's writings was available and this led a group of his associates to prepare the present volume. Dr. Frost was in a position by himself in his field and was responsible for much of the current thought in epidemiology. His development and life are revealed in this collection of papers which go back to his early days in the U. S. Public Health Service and his studies of acute epidemics and water pollution. Later papers embrace the broad principles of epidemiology and public health practice, and reveal the mature thinking of a man concerned with more than the local evidence of disease.

The editor and his group of associates are to be commended for their method of paying tribute to Dr. Frost. Many of the papers are familiar to epidemiologists but every student of public health would do well to study the methods and practices as revealed in this volume.

D. G. G.

What Price Alcohol? By Robert S. Carroll, M. D., Medical Director, Highland Hospital, Asheville, N. C. Preface by Adolph Meyer, M. D., LL.D., Sc. D., Henry Phipps Professor and Director of the Department of Psychiatry, Johns Hopkins University. Cloth. Price, \$3.00. Pp. 362. New York: The Macmillan Company, 1941.

Men and women with moderate, balanced views on the subject of beverage alcohol and the part it plays in human society always welcome a discussion of the subject by someone capable of speaking with authority and willing to subordinate his personal opinions and prejudices to the calm judgments of scientific truth, as revealed by an honest search for it. Those moderate men and women have been disturbed by the violent propaganda on both sides of this controversy and convinced that the extremists were much more interested in proving their point than in making an honest contribution to knowledge.

They, therefore, were pleased with the publication a few years ago of "Alcohol, One Man's Meat," by Dr. Edward A. Strecker and Francis T. Chambers, Jr. And now Dr. Carroll, already the author of several books on the problems of the human mind and emotions, has given the book-reading public the benefit of his long and, it may be presumed, successful experience in the treatment of alcohol's victims.

Writing as a man of science and a keen student of human nature, Dr. Carroll is no special pleader. He could in no sense be called a propagandist

for either side or the other. But what he has learned from his attempts to undo the harm which alcohol has done to a large number of men and women has left him convinced that alcohol is a great destroyer of minds, bodies and lives. He makes that clear in every page of his revealing book.

He does not scold. He has only sympathy for those who thought they could drink without being any the worse for their drinking, only to find that they were mistaken. In his eyes, most of them are victims of mistaken judgment, bad influences and society's shortcomings and deserve the same kind of understanding assistance that is accorded the victim of any other misfortune that might have been prevented, and ought to have been, but wasn't.

Even though he writes without passion or immoderation, however, he builds up a challenging case against liquor as a beverage. Drinkers—the social drinker, the occasional drinker, the frequent drinker—will not find "What Price Alcohol?" cheerful reading.

He is quick to admit that there are moderate drinkers who apparently can keep their drinking within the bounds of safety but warns that they are vastly outnumbered by those who try to go just so far and fail. He calls alcohol the brain's archenemy. He quotes admission figures from New York's Bellevue Hospital, showing that that great institution of healing admits 12,000 alcoholic patients a year. He laments that "in our land one out of three whom we meet is incapable of continuing any form of alcoholic usage without courting a very present danger of being damaged or wrecked by its potency." For the enlightenment of those who think they are entirely on the safe side because they drink nothing stronger than beer, he points out that there is as much alcohol in a stein of beer as in a whiskey and soda. He warns that one-third of those who turn to alcohol as a pick-me-up, or as an escape from the emotional stress and strain of the times, "is foreordained for early labeling as a drunkard." He insists that it is only a short step from the genteel drinker to the victim of alcohol dementia. The results of that metamorphosis, he says, "threaten the average man who surrenders to drink for ten years, a shorter period for women."

As you read Dr. Carroll's well-written volume you become more and more convinced that the victim of alcohol is more to be pitied and sympathized with than blamed. While not letting him off altogether, he levels the finger of censure at over-indulgent parents, poverty, even nutritional defects. He has much to say about alcohol as an escape from life's realities for those who "can't take it"—a false escape, he hastens to add. He believes that alcohol would be much less of a problem if bodies, minds and characters could be toughened up. A real he-man, he says, may drink because his friends drink or because he likes to drink, or for some other reason, but he does not turn to alcohol to salve wounded pride, thwarted ambition, chagrin over flunking an examination, or disappointment in a puppy-love affair.

Medical men will find much to interest them in the chapters describing the treatment of alco-

holism and the other forms of mental and physical illness which result from alcoholic indulgence. They will probably be surprised, in spite of their medical training, at the amount of care that must be devoted to every patient.

Even those who do not agree with some or many of Dr. Carroll's conclusions will give him credit for making a noteworthy contribution to the problem of society's attitude toward alcohol. It is hoped that other medical men will also make the fruit of their knowledge available in the same temperate, balanced way.

J. M. G.

Nursing in Prevention and Control of Tuberculosis. By H. W. Hetherington, M. D. and Fannie Echlemna, R. N. Cloth. Price, \$3.00. Pp. 316. New York: G. P. Putnam's Sons, 1941.

This book will prove to be a valuable guide for the nurse and teacher. It covers the many aspects and essential parts for a general understanding of tuberculosis problems.

The nursing instructions throughout are good. Of particular interest and value to public health nurses are the chapters on "Tuberculosis in Infancy and Childhood," "Tuberculosis and Pregnancy," and "Tuberculosis Case Finding and the Prevention of Contagion."

The use of frequent subheads and the excellent arrangement make this book easy to read and understand. The public health aspects and the splendid illustrations and charts make it a valuable reference for courses of both graduate and undergraduate study. Other valuable contributions as a teaching guide are the questions and selected references at the end of each chapter. This book will prove of valuable help, not only to nurses but to all who are engaged in the care and treatment of tuberculous patients.

M. P.

The Story of Clinical Pulmonary Tuberculosis. By Lawrason Brown, M. D., Late Director of Trudeau Sanatorium; Lecturer in Trudeau School of Tuberculosis; Author of Rules of Recovery from Tuberculosis, etc. Cloth. Price, \$2.75. Pp. 411. Baltimore: The Williams & Wilkins Company, 1941.

All the world loves a narrative but few like factual uncolorful history. This is definitely a story and not a history. It is the story of a man who lived with the disease himself, who lived amongst those who had it and lived ever with the purposeful view of improving the treatment, knowledge and conditions of fellow-beings suffering from this malady from which he eventually died himself. This exemplary trait, the method of diffusing his knowledge and emotions among his students, is here manifest in this story-type episode which reveals the picture as recorded through the eyes of a great clinician and teacher.

This is a narrative, much of it as readable for the layman as the physician; and this is especially so for those individuals who have had the disease, chased the cure, or had close members of their families who have been tuberculosis cases. To them it carries a real humanistic, personalistic interest.

The approaches to the subject in Chapters 2, 3, and 4, headed The Visit in 1700, The Visit in 1800,

and The Visit in 1900, respectively, are unique and take one back to these periods and portray the tuberculosis expert's visit to his patient in each subsequent period and how vastly changing knowledge altered the physician's approach to and treatment of his patient. It carries one back through these centuries in picturesque style as relates to the knowledge of tuberculosis.

Dr. Edward W. Archibald has contributed an inspiring chapter on the development of surgical methods in treatment and Dr. Homer L. Sampson has written a worthwhile chapter on diagnosis by x-ray.

This personalized story bears the characteristics, the finger prints, the mental imprints, the observational recordings and the marginal notations of a great phthisiologist, Dr. Lawrason Brown, which material is here welded together into a form which should interest and encourage individuals and sanatoria to own at least one copy to circulate among their friends and patients.

H. T.

A Manual of Pharmacology and Its Application to Therapeutics and Toxicology. By Torald Sollmann, M. D., Professor of Pharmacology and Materia Medica, the School of Medicine, Western Reserve University, Cleveland. Sixth edition, entirely reset. Cloth. Price, \$8.75. Pp. 1298. Philadelphia and London: W. B. Saunders Company, 1942.

Saunders' Manual of Pharmacology contains a vast store of information important to anyone practicing medicine for it is a compilation of descriptions of various drugs with details as to their pharmacologic action, their dosage and their therapeutic use. It also contains much information as to the effect of excessive dosage and the untoward effects of improper use. In view of the fact that so many drugs are likely to have untoward effects, such as nausea, vomiting, rashes, headache and diarrhea it is extremely important that anyone using these drugs should be familiar with their undesirable effects. A book of this type is not intended for thorough reading but serves its purpose best when kept in easy reach for ready reference.

The sixth edition is considerably larger than the previous edition which was published in 1936. It contains a comparatively small number of new chapters but the material in the previous edition has been greatly modified. A section on the sulfonamides is a very valuable addition though there is little written on the subject of sulfadiazine. In the chapter on malaria there is an excellent evaluation of the various antimalarial drugs. Much has been added on the subject of the barbiturates. The chapter on estrogenic hormones is considerably enlarged and includes a description of diethylstilbestrol. In the chapter on hormones the section on androgenic hormones and adrenal cortex extracts is new. The metrazol treatment of schizophrenia is described and there is a new chapter on the effect of war gases on the human body. The section dealing with hormones is excellent. There is a description of agranulosis caused by aminopyrine and other drugs and some excellent therapeutic suggestions such as the addition of sodium bicarbonate to local anesthetic

solutions and the use of quinine in the relief of torticollis and other muscular spasms.

C. K. W.

Elimination Diets and the Patient's Allergies. By Albert H. Rowe, M. D., Lecturer in Medicine, University of California Medical School, San Francisco, California; Consultant in Allergic Diseases, Alameda County Hospital, Oakland, California. Cloth. Price, \$3.00. Pp. 264. Philadelphia: Lea and Febiger, 1941.

Albert Rowe, who has written a book on food allergy, now produces a little manual for the use of patients, suffering from food sensitivity, and physicians who must treat these conditions. In reading the book, one must realize that food allergy is but a minor factor of the general subject of allergy and is emphasized only because the author has limited his book to a discussion of this particular type of allergy. Few people realize the botanical relationship between various fruits and vegetables nor are they well informed of the composition of various foods. It is never enough to tell a patient to avoid eggs or milk since few of them will realize that the former is found in mayonnaise, spaghetti, marshmallows, glazed fruits, ice cream, and icings; or that milk is to be found in oleomargarine, butter, cheese, cream sauces and commercial pancake flours.

The first portion of the book discusses the basic principles of allergy. The second portion presents a classification of the various types of foods, and the third describes various clinical syndromes resulting from food allergy, while the fourth portion is devoted to various elimination diets. The appendix contains record forms, questionnaires for detecting various suspected foods, and recipes for the preparation of various dishes from which must be excluded some of the important food items such as milk, wheat and eggs.

N. V. W.

The Medical Clinics of North America. November 1941. Military Medicine. Cloth. Price, \$16.00 per year. Philadelphia and London, W. B. Saunders Company.

For twenty-five years the W. B. Saunders Company has published bimonthly The Medical Clinics of North America. Each volume consists of a number of papers written by clinicians in one particular city or institution dealing with medical science as applied to actual practice. These publications have justly gained a reputation of being extremely valuable because of their usefulness to practising physicians. Reading an article is almost like attending a clinic and the practical grouping of the articles into a symposium adds to the value of the papers.

The November 1941 issue is devoted to the subject of military medicine and it should be in the hands of every physician in the Army and Navy and every physician who is planning to enter either service. The articles have been contributed for the most part by physicians in the Medical Corps or Medical Reserve Corps of the United States Army or Navy. Many of these men had acquired outstanding reputations in the service or prior to their entrance into the armed forces.

An article on The Physician in Selective Service and the Army gives a bird's eye view of the part being played by the medical profession in

building up our present army. The chapter on Medical Organization in the Permanent Camp and in the Field deals with the relation of the physician to the various units of the Army as a whole. There is an excellent article on tuberculosis in applicants for service in the armed forces, one dealing with treatment of communicable diseases in the Army, and one on the psychiatric aspects of military medicine. These are but a few of the many very interesting subjects discussed in this book.

One is struck by the difference in the point of view of the physician in the Army and the one in private practice. In the Army great emphasis is placed on the prevention of disease, and particularly on the spread of the infectious diseases. Extremely important is the reduction of complications and the lessening of the period of disability. Equally important is the detection of the early stages of those diseases which would eventually result in permanent disability with great cost to the government.

In view of the likelihood that every physician under forty-five will soon be in the armed forces the reviewer recommends this book to all in that age group.

C. K. W.

Diseases of Metabolism. Detailed Methods of Diagnosis and Treatment. A Text for the Practitioner. Edited by Garfield G. Duncan, Chief of Medical Service B, Pennsylvania Hospital; Associate Professor Medicine, Jefferson Medical College, Philadelphia, Pennsylvania. Contributors—Walter Bauer, Ferdinand Fetter, Cyril Norman Hugh Long, Louis Harry Newburgh, Tom D. Spies, Hugh R. Butt, Tracy Donald Cuttle, Frank Alexander Evans, Frederick Klemperer, Edward Holton Mason, John Punnett Peters, Leandro Manes Tocantius and Abraham White. Cloth. Price, \$12.00. Pp. 985, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1942.

Under the editorship of Garfield G. Duncan, more than a dozen physicians of outstanding reputation have written a group of articles dealing with various phases of metabolism and metabolic diseases. There is first a group of papers dealing with the physiology of metabolism and includes such subjects as basal metabolism, metabolism of carbohydrates, metabolism of proteins and amino acids, metabolism of vitamins, the role of minerals, water balance, vitamins and vitamin deficiencies. Knowledge of these subjects is essential to a clear understanding of the clinical course of the metabolic diseases and the response of the patient to dietary treatment. Recent investigational work has added so much to our knowledge of these fundamental subjects that even the recent graduate will find much that is new. Fortunately, these investigators have been able to simplify the descriptions of their subjects and to bear in mind the clinical application of their facts rather than overemphasize unproved theories. In other words, these papers are devoted to fundamental science written primarily for the physician. The second portion of the book deals with the application of the known facts of metabolism to various clinical entities. In an excellent chapter on vitamins and avitaminosis there is a splendid description of the chemistry of vitamins, the theories as to their mode of action in the body, the symptoms of deficient intake and the responses to their addition to the diet. Another chapter

dealing with gout contains one of the clearest clinical descriptions of the disease the reviewer has ever read. The chapter on diabetes is excellent and devotes considerable space to the care of the diabetic during pregnancy and confinement and of the child after birth. Diabetes in childhood and adolescence is given considerable space. Other metabolic diseases discussed include obesity, hyperinsulinism and diabetes insipidus.

C. K. W.

Manual of Physical Diagnosis: With Special consideration of the Heart and Lungs. By Maurice Lewison, M. D., Professor of Physical Diagnosis, University of Illinois College of Medicine; Consulting Physician, Cook County Hospital; Attending Physician, Mount Sinai Hospital, Chicago; Formerly Attending Physician and Chief of Tuberculosis Staff, Cook County Hospital; and by Ellis B. Freilich, M. D., Associate Professor of Medicine, University of Illinois College of Medicine; Professor of Medicine, Cook County Graduate School of Medicine; Attending Physician and Chief of Tuberculosis Staff, Cook County Hospital; Consultant to the Chicago Municipal Tuberculosis Sanitarium. With the collaboration of George C. Coe, M. D., Instructor of Medicine, University of Illinois College of Medicine; Associate Physician, Cook County Hospital; Clinical Assistant, Mount Sinai Hospital, Chicago. Cloth. Price, \$3.00. Pp. 317 with 75 illustrations. Chicago: The Year Book Publishers, 1941.

A highly practical little book, practical because it has apparently included only the essential details of diagnosis; little because it has omitted many rare and nonessential data together with extensive theorizing which would only add to the voluminousness of the work, is this volume contributed by these authors.

This manual puts special emphasis on the physical examination of the heart and lungs, a factor which should be of vital interest to the general practitioner because much of his daily practice consists of chest examinations and the interpretations of what he sees, feels, and hears within the thorax.

Since the greater number of general practitioners are of necessity unequipped with the paraphernalia essential to carry out such procedures as x-ray, blood chemistry studies, electrocardiography, bronchoscopy, etc., much can still be accomplished by the use of the older established methods of inspection, palpation, percussion and auscultation if these procedures are understood and can be interpreted into accurate diagnosis.

For this reason this little manual should be of inestimable value to the general practitioner because of this very brevity and clarity of purpose, which makes it a time-economizing reference handbook containing facts and details minus unnecessary elaborate window dressing.

H. T.

SAYS ARMY AT PRESENT REQUIRES FIVE THOUSAND MORE PHYSICIANS

A. M. A. JOURNAL URGES ALL THOSE NOW READY FOR SERVICE AND NOT FILLING ESSENTIAL POSITION TO APPLY IMMEDIATELY

"As we go to press the Army requires five thousand physicians, in excess of those already enrolled (in the Army), to meet existing needs," The Journal of the American Medical Association for April 25 says in an

editorial. "Therefore, every physician ready now for service who knows that he is not filling an essential position may apply at once to the office of the corps area commander in his area, to the Office of the Air Surgeon, Army Air Force, Washington, D. C., or directly to the Office of the Surgeon General in Washington so that he may receive at once an application blank and proceed to have a physical examination. The Procurement and Assignment Service headquarters in Washington, aided by the consulting office in the American Medical Association and the individual corps areas and state offices, will continue to clear the names of physicians who apply.

"This week to every physician licensed to practice in the United States there is mailed the long awaited enrolment form and questionnaire of the Procurement and Assignment Service. It comes jointly from the National Roster of Scientific and Specialized Personnel and the Procurement and Assignment Service for Physicians, Dentists and Veterinarians. Each of these agencies is, in turn, related to others and ultimately to the Executive Office of the President. Every physician who receives the medical enrolment form should fill it out as completely as possible and return it immediately in the franked envelop which accompanies it. Opportunity is given to indicate first, second, third and fourth choices of assignment, and it is hoped that the complete functioning of this service will be such that Army, Navy, public health, civilian and industrial needs may be met.

"This week in Washington a meeting has been called of state representatives of the Procurement and Assignment Service east of the Mississippi River only together with officers of the Army and Navy medical departments, the corps area officers and the board of the Procurement and Assignment Service to work out plans which will aid recruitment in the individual states. Such plans will, of course, be announced just as soon as they have been suitably drawn and made available. The chairmen for veterinary medicine and dentistry have not been called because there exists no shortage in the supply of these professions for the armed forces. Chairmen of states west of the Mississippi River will meet at a later date at some city west of the Mississippi River."

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BILIARY DISEASES AS SEEN BY A SURGEON*

By

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The first question that naturally arises in such a discussion as this is: What biliary conditions are best treated by surgical methods? The answer will vary considerably depending upon who gives it. There are some medical men who are extremely conservative in submitting to operation patients afflicted with disorders of the gallbladder and bile ducts. A noted gastroenterologist has said that only persons suffering repeated sharp attacks of biliary colic in whom gallstones can be demonstrated by x-ray examination should be operated upon. At the other extreme are those surgeons who feel that any patient with digestive symptoms suggestive of biliary disease should be explored. Most of us think the common sense position lies somewhere between those marked views, and that perhaps inflexible rules should be avoided, each case being decided on its own merits. There are, however, certain general types that, in my own opinion, may be regarded as suitable for surgical treatment. The most definite of these is the group conceded to the surgeons even by the medical authority referred to above; namely, those patients who have severe recurrent attacks of biliary colic requiring sedative injections, with nausea and vomiting, and gallstones demonstrated by x-ray study. There will, perhaps, be little dissent from this opinion.

A second group comprises those patients who suffer from a primary fulminating attack of gallbladder inflammation. These are

the cases with sharp continuous pain, fever, leucocytosis, tenderness, rigidity, muscle spasm, and possibly a palpable mass in the upper right quadrant. Here there may be some who would prefer to wait on these cases, believing that many acute attacks of cholecystitis clear up spontaneously and that there may be no future recurrence. I do not share this view. A gallbladder acutely diseased to the extent necessary to cause such a clinical picture certainly possesses the possibility of further progression to gangrene, rupture, abscess, peritonitis and death. It is placing too much responsibility on nature and shirking our own responsibility to assume that these things will not happen. Furthermore, should spontaneous recession take place, such a gallbladder will very probably be the cause of future trouble. Under such circumstances, the part of wisdom would seem to be active intervention by operation.

The third class of cases is less well-defined and even more disputed than the second. These are the patients with long continued digestive disturbances, eructation, distention and constipation, in whom clinical and x-ray studies indicate gallbladder disease. There may or may not be definite proof of stones, but there will at least be evidence of a non-functioning or diseased gallbladder. The patient may never be very ill but is never very well. These cases can be carried along with medical care in a more or less tolerable existence, but, in my personal opinion, will be better treated by operation. A fourth condition calling for surgical intervention is that of persistent obstructive jaundice. Various pathologic causes may give rise to this condition, some of which, such as stone in the common duct, may be cured by operation. Others that are not curable, as is the case with many obstructions due to malignant disease, may at least be benefited by palliative operations. A fifth

*Jerome Cochran Lecture, delivered before the Association in annual session, Montgomery, April 22, 1942.

group in which surgical treatment is indicated are those cases of gallbladder disease incidental to some other lesion for which operation is undertaken, and in which, after correction of the principal disorder, the patient is in sufficiently good condition to permit removal of the diseased gallbladder as well. So much for one man's views as to the scope of surgery in biliary diseases.

An extended discussion of the pathology of these various forms of disorders of the biliary system would carry us too far afield. It may suffice to say that many factors play a part. Among these are diet, pregnancy, obesity, and disorders of metabolism, especially of cholesterol and the fats generally. The role of infection is interesting and variable. In some cases it is apparently predominant, as in instances where pure cultures of the *Bacillus typhosus* are obtained from gallstones, perhaps years after an attack of typhoid fever. In other gallbladders, presenting all the signs of acute inflammation, it may be impossible to demonstrate any infecting organisms. Some such cases may be due to circulatory disturbances from compression of the cystic vessels in their close relation to the cystic duct, and others may be chemical in origin from reflux of pancreatic juice into the biliary system. The formation of gallstones involves chemical and physical forces as well as altered physiology of secretion and absorption of the mucosa of the gallbladder. The stones themselves set in train by their mechanical presence events that may lead to obstruction of the common and cystic ducts, back pressure on the liver, jaundice, compression of the cystic vessels, gangrene of the gallbladder, erosion between the gallbladder and the alimentary tract, passage of stones into the lumen of the gut, and intestinal obstruction from this cause. There is no need here to discuss the pathology of the various forms of neoplasms, some of them rare and interesting, that may directly or indirectly involve the biliary tract.

The diagnosis of biliary disease is of the greatest practical interest to the clinician. In this particular field the history of the case is of unusual value. Typhoid fever, pregnancy and excessive weight are factors of significance. Persistent digestive disturbances with eructation, gas pain, constipation and intermittent attacks of sharp pain under the right costal margin, referred

through to the back or shoulder, are of importance. The occurrence of tenderness on examination in the gallbladder region and jaundice or a history of jaundice are the most notable physical findings. It should be pointed out, however, that examination between attacks is often negative except that the patient usually belongs to a certain group, namely, age from 35 to 55, stout, heavily built, with a wide costal angle, and more often female than male. Too much significance should not be attached to the traditional "fair, fat and forty," nevertheless, because proved gallbladder disease is not infrequent under thirty years of age, and not unknown under twenty. It may also occur in notably thin people. The absence of physical findings is not sufficient to make a negative diagnosis when history and x-ray findings are strongly suggestive. Examination in acute attacks will usually show severe pain, tenderness, muscle spasm and possibly a mass in the upper right quadrant of the abdomen. There is apt to be fever, leucocytosis, vomiting and possibly jaundice with a positive van den Bergh test. Liver function tests in the experience of my medical friends have not been of great value. The x-ray study of the gallbladder with dyes is very helpful and important. Not infrequently, stones are actually demonstrated, or a distorted, abnormal looking gallbladder. The failure of the gallbladder to fill with the dye, or defective emptying of the gallbladder, is also significant. It should be pointed out, however, that occasionally a gallbladder which has stones in it and definite disease does not give x-ray evidence of trouble, and vice versa. Occasionally a gallbladder which does not fill properly with the dye is found at operation to show no recognizable evidence of disease. These unusual failures of the dye method of x-ray study of the gallbladder do not alter the fact that it is a very great contribution to better diagnosis and the most valuable of the laboratory aids in this field. Patients with persistent jaundice offer at times difficulties in differential diagnosis. The most important point here is to exclude from operation those cases due to chronic cholangitis or so-called catarrhal jaundice. Also, it should not be forgotten that painless jaundice is at times due to so-called silent stones in the common duct.

One of the improvements in the surgical treatment of biliary disease is the increased attention paid to preoperative preparation. In cases which are not emergencies, it is desirable to have the patient in the hospital two days before the date set for operation. During this time the patient is kept in bed and given a daily enema and perhaps a mild saline laxative in the morning, is put on a high protein, low residue diet, fluids are forced by mouth; and 1000 cubic centimeters of salt solution with 5 per cent glucose intravenously are given daily. For acute cases, in which the writer operates promptly, time is taken only for a brief preparation which consists of a dose of morphia, glucose and salt intravenously and operation within a few hours. In complicated cases where diabetes, high blood pressure or other constitutional disturbances have to be dealt with, a longer period of preparation is required and it is desirable in certain of these cases to have the patient in the hospital for as long as one or two weeks prior to operation. The essential purposes of preliminary treatment are the building up of liver glycogen, the establishment of fluid balance, the clearing of the alimentary tract of residue, rest to the heart, and psychologic stabilization. It should be added that Ravdin and his associates have emphasized the need of protein food in preparing the liver for surgical procedures, so that the diet should include this factor as well as carbohydrates. In cases showing a reduction of the blood proteins, this condition should be treated before operation by transfusion of serum or plasma.

It is not appropriate in this paper to discuss details of surgical technique, but certain operative problems and principles are of general interest. So far as anesthesia is concerned, I have been using avertin, nembutal, seconal, or sodium pentothal as a preliminary to full surgical anesthesia. These drugs have been used in a considerable series of cases without any instance of trouble which could be traced to them. They are supplemented by a general anesthetic such as ethylene, cyclopropane or light ether. The writer has not employed spinal anesthesia for gallbladder cases. In a few rare instances, an acute gallbladder has been drained under local anesthesia when the patient's condition required it.

In regard to the matter of when to operate in acute cases, the writer belongs to the

school that believes that acute gallbladder disease constitutes an emergency that should be operated on without delay. It is not considered as imperative as a ruptured appendix and a few hours may be taken for preparation of the patient, but I can see no advantage in long waiting. The operation itself often is actually easier in acute cases than in chronic ones. Planes of dissection are more readily found and followed in tissue distended by edema than in the scarring and dense adhesions that mark chronic inflammatory processes. The general condition of the patient may be better than after a period of delay, particularly if the case "goes bad" instead of improving. The supposed danger of spreading infection by a prompt operation has not been borne out in practice, whereas disaster due to delay is a proved fact in a fair number of cases.

Numerous studies have indicated that many cases of acute gallbladder disease are not essentially infectious at all, but, as mentioned before, may be caused by circulatory disturbance from pressure of stones, etc., on the cystic vessels, or from chemical irritation due to pancreatic regurgitation. It is also a well attested fact that a considerable percentage of acutely involved gallbladders, instead of resolving under treatment, progress to gangrene, perforation, abscess or peritonitis.

As a rule, the gallbladder should be removed rather than simply drained. The more severe the damage to the gallbladder, the more important it is to remove it, so that a partially gangrenous, badly inflamed gallbladder is particularly the type that should be removed, if possible. The exceptions, in which drainage rather than removal is the proper procedure, depend not so much upon the condition of the gallbladder but rather on the patient's general condition. Any grave disturbance of the general health may make it unwise to do anything more than the simplest operation, which is, of course, drainage. There are, however, certain local conditions about the gallbladder which make its removal so extremely difficult that drainage is the wise course to pursue. Before taking out any gallbladder, however, it is important to palpate the common duct and the head of the pancreas to make certain that it is possible for the common duct to drain itself. In the case of inoperable tumor of the head of the

pancreas blocking the common duct, the operator may find himself in a difficult situation if the gallbladder is removed before the fact is determined, because in such cases the gallbladder affords much the best method of draining the backed-up bile by an anastomosis with the alimentary tract. In acute cases the writer does not, as a rule, open the common duct unless there is a palpable stone in it or unless it is obviously dilated and obstructed. The writer does not close cholecystectomy wounds without drainage, even in the most favorable cases. A single drain is placed to the stump of the cystic duct and allowed to remain in place for four or five days when it is removed and no other drain replaced. This may often be unnecessary, but seems a wise precaution against the possibility of bile leakage and serious peritonitis. It does not materially impair the healing of the wound nor predispose to obstruction.

Operation on interval cases, as a rule, is cholecystectomy, with occasional exceptions as noted above. In these cases the exploration of the common duct becomes a matter of greater importance and there is at the present time a growing body of surgical opinion that urges more frequent exploration of the duct than has been customary in the past. The writer believes that an over-enthusiastic habit of exploring the common duct will, in the long run, do more harm than good. The chances are that the occasionally overlooked stone in the duct will be more than offset by increased morbidity and mortality when the common duct is frequently and unnecessarily explored, and by an increased chance of late complications from stricture of the duct. So far as a rule can be laid down in such cases, it is as follows: The common duct should be opened if stones can be felt in it, if the common duct is definitely dilated, definitely thickened or if there have been repeated attacks of jaundice. Aspiration of the common duct with a fine hypodermic needle is also helpful. The discovery of clear golden bile is evidence that the ductal system is normal; whereas, dirty dark bile with sediment in it suggests that the duct be opened and explored. If palpation of the duct, aspiration, and the patient's history do not reveal any of these signs, then the operator does not open the common duct. In those cases in which the common duct has to be drained, the writer

has preferred to drain through the stump of the cystic duct, when possible, and close the wound in the common duct completely. The use of a T tube has been troublesome in my hands. The practice of rather forcible dilatation of the common duct and the sphincter of Oddi advocated by some surgeons has not been employed by me, so that I am unable to comment on it from personal experience. Like others, I have attempted always to pass an instrument into the duodenum when the common duct is opened but without effort at forceful dilatation. A number of surgeons have reported favorably on the value of x-ray studies of the common duct by injection of opaque media at the time of operation, in the effort to visualize stones and other anomalies. The writer has had no personal experience with this method, but when facilities are available it should prove helpful in doubtful cases.

An interesting question for decision arises when, because of apparently good reasons, the gallbladder has been explored and examination shows it to be normal without evidence of disease either in the gallbladder itself or in any of the ducts. The teaching of some surgeons is that in such conditions it is wise to remove the gallbladder on the ground that inspection and palpation of the organ have failed to show disease which exists in its interior and that the history and x-ray examination, if indicating gallbladder disease, should be sufficient to justify the removal of an apparently normal gallbladder. The writer does not take this point of view. He feels that when a gallbladder is to every method of direct examination apparently normal it should be considered normal and it is more rational to assume that the preoperative examination was in error than to remove a probably normal organ, simply on suspicion. Certain unusually difficult types of cases need special mention. With a stone firmly impacted in the papilla of Vater, it is at times necessary to approach the stone by opening the duodenum and dividing the margin of the papilla so as to release the stone and deliver it into the duodenum. These cases are unusual but occur frequently enough to make it necessary for the surgeon to be prepared to deal with them.

Another condition of unusual occurrence but of exceptional difficulty is the presence of a growth in the common duct. In such

cases cure is rarely possible and it may be very difficult even to drain the biliary system if the growth extends up the common duct, to and involving the hepatic ducts. Resection of the growth with reconstruction of the common duct is, of course, the ideal procedure. When this is impossible, one should try to pass a tube through or around the growth into the hepatic ducts to provide biliary drainage. Primary carcinoma of the gallbladder itself is treated by removal of that organ, unless, as often happens, the disease is already too extensive for successful removal.

Without attempting a statistical study of final results, it may be well to give one's personal impression of this basic test of any method of treatment. The most satisfactory results are obtained when acute fulminating cholecystitis or long continued biliary colic with stones are the reasons for removing the gallbladder. The least satisfactory groups are the cases with ill-defined digestive symptoms in which no stones are found at operation, and cases with jaundice caused by malignant disease of the head of the pancreas or of the bile ducts. In these latter patients the more radical attacks developed by Whipple and others give promise of rescuing certain favorable early cases, but, in general, the outlook is not hopeful. The other group, the digestive disturbances without stones, is apt to have a continuance of symptoms after operation in as much as one-third of the cases. The suspicion arises that some of such cases were wrongly diagnosed and the real trouble was not in the biliary system. Among the symptoms developing after any operation for biliary disease that particularly embarrass the surgeon are those suggestive of remaining stones in the common duct. Such symptoms may be due to stones that were overlooked at the time of operation, or to newly formed stones, or not to stones at all but to inflammation of the ducts or spasm of the sphincter of Oddi. The latter condition may be recognized at times by relief afforded following the administration of the nitrites. Such cases, of course, should not be reoperated upon. Recurrent or overlooked stones, on the other hand, usually require a second operation, although in a few fortunate instances the stones may be passed spontaneously. In spite of these various unsatisfactory cases, it may be fairly said that surgery of the biliary diseases,

when preceded by proper diagnosis and carried out with due care and skill, gives on the whole a high percentage of permanent good results.

TREATMENT OF HEART DISEASE* WITHOUT SPECIAL TECHNICAL EQUIPMENT

By

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No matter what the basic causes, the disabilities of most types of heart disease have a common origin. Cardiac symptoms come in arteriosclerosis, hypertension, congenital malformations, syphilis, and rheumatic fever only when the myocardium begins to fail. Attempting correction of underlying conditions is of rare value. With only the equipment commonly at hand, the physician can readily recognize the myocardial failure and, therefore, adequately treat most diseased hearts.

How, then, does one detect myocardial failure without the complex gadgets of the more mechanistic cardiologists? The use of technical equipment in examination has grown tremendously and these specialized procedures are indispensable for the most accurate diagnosis in unusual, complex or intractable cases. However, the diagnosis of myocardial failure and the control of its treatment are still based on detailed history and careful physical examination.

The history will tell of dyspnea and palpitation. Minimal pathologic dyspnea is little more than normal shortness of breath on unusual exertion. Greater dyspnea may come in asthma-like attacks, chiefly at night, or on any exertion. Palpitation is apt to parallel the dyspnea. Both are more frequent on exertion after meals. Both may be greater with the patient lying down than in the sitting position. Most advanced dyspnea and palpitation are constant regardless of activity or position.

Symptoms from the congestion of individual organs may be nocturia from inadequate renal blood flow, digestive disturbances from abdominal congestion, and dull upper abdominal pain and slight jaundice

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from congestion of the liver. Pulmonary congestion may give a cough with occasional slight hemoptysis.

Examination of the heart itself may indicate the presence of disease and its type. Cardiac failure is diagnosed, not from the heart, but from the evidences of congestion of other organs. There will usually be coarse, moist, crepitant or crackling rales at one or both lung bases. The liver will usually be enlarged, smooth and tender.

Edema progresses from slight swelling of the ankles present only in the evening to tremendous swelling of feet, legs, scrotum, abdominal wall and lower back. It pits on pressure. Edema from myocardial failure never extends above the hydrostatic level of the heart. There may be fluid in pericardial, pleural or peritoneal spaces.

Few conditions can be confused with cardiac failure. With other diseases there are very apt to be diagnostic features in the history and physical examination without the typical findings of cardiac failure. Laboratory and other technical procedures will occasionally be indispensable in differential diagnosis and the identification of coexisting disease, as well as in those cases with atypical histories.

Treatment of the myocardial failure of most heart disease consists in an attempt to reduce the heart's work to within its capabilities, and to increase the cardiac efficiency by regulation of activity, by diet, by medication, and by removal of accumulated fluid.

Desirable restriction of activity depends on the severity of the failure. Activity should always be limited to less than will produce symptoms. With signs such as persistent edema or rales, the patient should remain in bed. With lesser evidences he need only stop all manual and strenuous mental work, do nothing that requires much moving about and climb no hills or stairs. He should spend at least ten hours in bed each night and lie down for an hour once or twice during the day, best after meals. His entire schedule should be carefully scrutinized and if necessary a detailed new regimen outlined by the physician.

Sedatives help insure rest. Morphine is the most valuable drug in advanced heart disease. A quarter-grain will give great relief to the exhausted, orthopneic patient. To avoid addiction, narcotics are best not used

in milder failure. Other sedatives, such as one-quarter to one-half grain of phenobarbital three times daily, will promote rest and peace of mind.

Digitalis should be given to all patients with cardiac failure unless there are definite contraindications. The more expensive purified and extracted preparations have no especial value. The tincture is quite unsatisfactory because of difficult measurement, rapid deterioration, and widely variable potency. Injectable preparations do not appreciably speed the effect of the drug. Digitalis substitutes, such as strophanthin, are more difficult to control, and should be avoided. Quinidine cannot replace nor be used simultaneously with digitalis. All in all, powdered digitalis leaves in pills or capsules are best for routine use.

Digitalis is given in large dosage until the toxic level is reached or exceeded and then in smaller amount. Whenever toxic symptoms occur, the drug must be stopped until 24 hours after they have disappeared. Lessening of dyspnea, slowing of the regular pulse, or diuresis may come simply from reduced activity and cannot be used as an index of maximum digitalis effect. Toxicity is the proper index. Evidences of digitalis intoxication are loss of appetite, nausea, vomiting, a greater number of extra systoles or an increase in the degree of heart block. All are readily suspected clinically. Nausea is the most frequent by a wide margin, but is in no way harmful. The danger of other symptoms is overbalanced by the value of full digitalization.

The exception is in hearts with auricular fibrillation. Here the heart rate slows progressively and a rate of about 70 is used as the best criterion of proper digitalization. Bear in mind that this is not the radial pulse rate which is often much slower than the heart in this arrhythmia.

Rapid digitalization can be undertaken if the patient has had no digitalis. One can give $7\frac{1}{2}$ grains or more as the first dose, $4\frac{1}{2}$ grains or more as the second, four hours later, and then three grains every four hours until nausea appears the next day. With those who have had the drug recently or whose digitalis history is unknown, three grains every four hours will be safer and, at the same time, will digitalize in three or four days at the longest.

As a maintenance dose, most patients will need a grain and a-half to three grains daily. It should be enough to occasionally produce mild nausea relieved by a few days off the drug. This dose is continued indefinitely.

Following the patient's weight from day to day is the best way to judge fluid loss or retention. Restriction of fluid intake to two or three pints a day is advisable when there is excessive or progressive edema. When rest and digitalis do not correct the edema, removal of the fluid by diuretics or mechanical means becomes necessary.

The mercurial diuretics, such as salyrgan, are the most used. Fifteen grains of ammonium chloride or nitrate is given three times daily by mouth, and, after two or three days, one cubic centimeter of salyrgan is injected intravenously. Thereafter, two cubic centimeters are given every three or more days until the edema is gone or the drug loses its effect. Vegetable diuretics have less value. Some patients will lose much fluid taking 15 to 30 grams of urea by mouth three times daily. Potassium chloride, 5 to 10 grams daily, as salt on the otherwise unsalted food, has had some success.

Pericardial or pleural fluid should be removed by paracentesis as soon as it is found. Abdominal fluid need not be removed by tapping until its presence embarrasses the respirations, unless diuretics are ineffective.

Diet is of less importance. With advanced failure, the Karel diet, consisting of four glasses of milk and nothing else, is of value but will be tolerated for only a few days. The patient in bed will do best on a soft, bland diet. Three or four small meals of equal size will put less load on the heart than will the usual two small meals and one large. Slight protein restriction will avoid excessive specific dynamic action. The restriction of salt to that normally added in the kitchen discourages edema. Rigid restriction of protein or salt is dangerous. The total amount of food should be such that the patient will maintain his weight a trifle below normal or gradually reduce it in that direction.

There are forms of heart disease that do not fall into the group described and that may require the use of technical equipment. In these, too, clinical acumen will often make the results of special tests merely confirmatory.

Coronary occlusion is an entirely separate form of disease that is usually easy to diagnose from the character of the pain, but an electrocardiogram may be necessary. Its treatment takes precedence over but is not incompatible with that of other heart disease. Angina pectoris is diagnosed wholly from the history. There is inadequate time to discuss these coronary artery diseases more fully.

Certain abnormalities of the cardiac rhythm may exist as the sole manifestation of disease. These are best identified in the electrocardiogram, but frequent long observation will usually allow the clinician to recognize them at the bedside. Time also forbids their further discussion.

In hyperthyroidism, treatment of the goitre is of material assistance to the heart. A rare case of true myxedema may cause heart failure that responds only when thyroid extract is given. As thyroid extract is quite detrimental to other types of failure, this treatment must never be used without complete diagnostic study and very careful control. Beriberi heart simulates commoner forms but responds only to large doses of thiamine. Constrictive pericarditis and the congenitally patent ductus arteriosus have been treated surgically with success but only by the most expert of the expert surgeons. Such are cases for detailed specialized study and individualized treatment.

The vast majority of heart disease falls into the congestive failure group where specialized procedures are not strictly necessary. An adequate diagnosis can be made and good response will follow treatment whether the physician has all of the technical equipment in the world or simply that which each carries in his bag.

Uterine Inertia—When a woman in labor shows definite evidence of inertia, the obstetrician should at once be on his guard. He should survey the case carefully to see if anything has been overlooked, and especially should he recheck the pelvic measurements, be sure there is no dystocia, and verify his diagnosis of presentation and position. A large enema should be given and the bladder should be emptied either by voiding or catheterization. The case should be handled in the most aseptic manner, using rectal examinations, and making vaginal examinations only infrequently and when absolutely necessary.—*Smith, Texas State J. Med., May 1942.*

A NEWER TREATMENT FOR PERENNIAL HAY FEVER*

By

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Although there is lack of complete accord in nomenclature, all modern texts on medical diagnosis and therapeutics include a section on the treatment of non-seasonal hay fever, perennial allergic rhinitis, perennial vasomotor rhinitis, or perennial hay fever.

Goodale (1916)¹ reported perennial hay fever of allergic cause in what appears to be the first report of this condition in the American literature. Cooke² reported similar findings two years later. Numerous subsequent reports have appeared.

Writers previously considered that hay fever was always caused by pollens only. More recent reports, however, include foods, drugs, various inhalants (such as face powder), house and occupational dusts, animal dander and feathers among the possible causes.

Perennial hay fever is similar to seasonal hay fever in immunologic and clinical aspects. However, the two differ in etiology. Perennial hay fever is not primarily due to pollens. Therefore the attacks are usually non-seasonal, and the etiologic factors more or less constant in the environment. Seasonal hay fever is always due to specific pollens.

The symptoms are not so severe as in the seasonal type and usually are constant or occur throughout the year. Nasal symptoms predominate and are chiefly sneezing, itching of the nose, roof of mouth and throat, rhinorrhea and alternating nasal blockage.

The symptoms occur in varying combinations. The turbinates are usually pale and waterlogged. The throat and gums are frequently pale, and there is always evidence of postnasal discharge. The diagnosis is not difficult. Most patients insist upon impressing the physician that they are never free from head colds. This condition is often associated with allergic bronchial asthma and

occasionally the patient considers the asthma of secondary importance.

This paper concerns only a series of patients who gave a positive reaction when tested with house dust extract. The writer is of the opinion that the specific antigen in house dust extract is similar to if not the same as that found in the extract of cotton mattress.

A high incidence of patients with sensitivity to house dust has been reported by Cohen and Rudolph,³ with twenty per cent of 1,250 cases of asthma giving positive reactions. They also found 1,145 reactions to bedding.

Cohen, Nelson and Reinartz⁴ reported that aging of cotton lintens, even when autoclaved in sealed containers, is accompanied by an increase in skin reaction. Cazort⁵ also observed this aging effect on cotton lintens. The antigenic principle of house dust, old cotton lintens, feathers and old kapok appears to be similar.

Numerous writers have reported that common allergens are frequently complex and contain various specific antigenic substances which give varying reactions in different patients. This knowledge opens up other possibilities of antigen origin.

Blackmar⁶ has suggested a simple method of preparing cotton mattress extract for diagnosis and treatment. He secures approximately a cupful of cotton from the patient's mattress. This cotton is packed in a jar and covered with a solution made from equal parts of glycerine and normal salt solution. The extraction is allowed to go on for twenty-four hours. The extract is passed through filter paper, recovered and sent to the bacteriologist who filters it through porcelain candle and places it in rubber capped vials. After it has been determined to be sterile, this preparation labeled concentrated cotton mattress extract is ready for use. Blackmar used this sterile extract for skin testing and desensitizing allergic patients. He administered it hypodermically and intramuscularly, frequently diluting the

*Read before the Association in annual session, Montgomery, April 21, 1942.

1. Goodale, J. L.: *Diagnosis and Management of Vasomotor Disturbances of the Upper Air Passages*, Boston M. & S. J. 175, 1916.

2. Cooke, R. A.: *Hay Fever and Asthma; The Uses and Limitations of Desensitization*, New York State J. Med. 107: 577, 1918.

3. Cohen, M. B., and Rudolph, J. A.: *Use and Abuse of Drugs in Asthma*, J. A. M. A. 98: 1864, 1932.

4. Cohen, M. B.; Nelson, T., and Reinartz, B. H.: *Observations on the Nature of House Dust Allergen*, J. Allergy 6: 517, 1935.

5. Cazort, A. G.: *The House Dust Antigen in Allergy*, South. M. J. 29: 1022, 1936.

6. Blackmar, Francis B.: *Personal communication*.

intramuscular doses with five to ten cubic centimeters of the patient's own blood. He obtained good results from this plan of treatment.

The writer adopted this and had a few severe systemic reactions to doses given subcutaneously. He then tried various methods of administering this extract by mouth and found that doses of this concentrated cotton mattress extract as small as two drops often precipitated systemic reactions. Numerous trials in the method of administration were made and the plan here reported was eventually adopted.

The extract used for skin testing is made from a mixture of extracts collected from twelve or more sources. Care is exercised to inject no more than one- to two-hundredths of a cubic centimeter intradermally. There is usually an immediate local reaction. The tests are interpreted as strongly positive, positive or negative. In strongly positive reactions with numerous pseudopods from the site of injection three or four drops of epinephrin 1: 1,000 into the site of the test dose are given. A careful history is obtained and obviously suspected causes other than cotton mattress dust are checked by skin test.

Oral desensitization is begun by putting the patient on small doses of very dilute cotton mattress extract. The trial or first schedule consists of progressive doses of a diluted extract made by adding one drop of concentrated extract to one ounce of water. This diluted extract is furnished to the patient in a dropper bottle. At the same time the patient is given a schedule card with each day's doses recorded and dated, and with spaces included for the patient to write in his daily symptoms. The dosage begins with one drop of this 1: 480 dilution (one drop of concentrated extract to one ounce or four hundred eighty drops of water) taken in a glass of water before each meal. Each day the patient adds one drop to the previous day's total; i. e., first day three drops, second day four drops, third day five drops, etc., up to twenty-four drops or eight drops in a glass of water before each of three meals daily. Completion of this trial schedule requires three weeks. At this time the patient returns with his completed schedule card and a second dilution is given along with a second schedule dosage card. The second dilution is made by adding three

drops of concentrated cotton mattress extract to one ounce of water, and these doses for this schedule are identical with those of the first, providing there have been no reactions. Three weeks later the third schedule of dosage is begun, using a dilution made by adding five drops of concentrated extract to one ounce of water. Each three weeks a new schedule card is completed and the dilutions are progressively larger, the fourth being eight drops to one ounce, the fifth eleven drops to one ounce, the sixth sixteen drops to one ounce, the seventh twenty-two drops to one ounce, the eighth and final dilution being made by adding thirty drops of concentrated extract to one ounce of water. This plan of treatment requires the completion of eight schedules of progressive dosage. Upon completion of the last schedule, the patient is instructed to take five drops of the last dilution in a glass of water before meals one day each week, the time intervals between doses to be gradually increased from one to three or four weeks. All are encouraged to continue these maintenance doses for one or two years.

Relief has frequently been reported on or by the third day after beginning treatment. Patients who are not relieved by the end of two weeks are usually found to be getting too large a dose, and if they will drop back about one week in the schedule relief usually results promptly. The patients soon learn to drop back in the schedule when the dosage is progressing too rapidly.

An occasional patient has been seen who reacted to a one-drop dose of the extract diluted 1: 480. Two patients have reacted to a dilution made by adding one drop of concentrated extract to four ounces of water in one-drop doses.

It is recognized that there is no standard dosage of the cotton mattress extract. The plan and progress of desensitization for each patient must be regulated by that individual's response to treatment.

The majority of patients the writer sees suffering with perennial hay fever have a postnasal discharge, excessive pharyngeal lymphoid tissue,⁷ and other evidences of iodine deficiency. For this reason, from one to three drops of organic iodine solution⁸

7. Jarvis, D. C.: Personal communication.

8. Amend's Solution of Soluble Organic Iodine (Thos. Leeming and Son). Burnham's Soluble Iodine Solution. Organidine, Tilden.

and from three to five drops of dilute hydrochloric acid are given in the same glass of water with each dose of the cotton mattress extract. The iodine, hydrochloric acid and extract cannot be mixed in high dilution because of the disturbance of the delicately balanced pH of the iodine solution.

All perennial hay fever patients are placed upon a high vitamin, low carbohydrate and high protein diet, are instructed to avoid white wheat flour, citrus fruits, sugar, foods with sugar added, and cooking oils. This latter plan is adopted because these foods are more or less devitaminized and demineralized. Many patients voluntarily report that carbohydrate indiscretions will invariably result in aggravated symptoms. Many of these patients exhibit subclinical deficiencies; some frank evidence of early pellagra. Specific refined vitamins are presented as indicated, being careful never to give a single vitamin concentrate over an appreciable period of time. The writer believes that vitamins occur in groups naturally and that there is such a thing as vitamin affinity. Therefore the indiscriminate use of single vitamin concentrates could easily cause deficiency in other vitamins because of extraction from the body by affinity.

The youngest patient seen was nineteen months old and the oldest seventy-two years. The majority were between twenty-five and forty. Forty of one hundred fifty patients failed to complete the prescribed plan of desensitization; a few being completely relieved for a few weeks were falsely under the impression that they were well. Ninety-two patients reported complete relief from symptoms, twenty reported marked but incomplete relief, twelve reported partial relief, and ten reported no relief.

Upon follow-up, ten patients have reported complete relief for three years, eighteen reported complete relief for two years, and twenty-four patients have returned for a second course of treatment after having been completely relieved of symptoms for more than twelve months. A complete follow-up is very nearly impossible on an appreciably large number of these patients.

SUMMARY

An original plan of oral desensitization to mattress cotton extract is outlined and recommended for the treatment of perennial hay fever.

SPECIAL ARTICLE

COMMISSIONS FOR MEDICAL STUDENTS

1. The War Department on May 8 granted authority to corps area commanders to waive the provisions of paragraph 5, AR 140-33 and paragraph 7b, AR 605-10, for the appointment as second lieutenant, Army of the United States (Medical Administrative Corps), of physically qualified male citizens of the United States above the age of 18 years who are bona fide accepted matriculants at approved medical schools within or without the United States. Officers so appointed will not be ordered to active duty until eligible for appointment as first lieutenant, Army of the United States (Medical Corps).

2. a. Appointment will be made without reference to an examining board as prescribed in paragraph 20 c, AR 140-5, and without reference to procurement objectives.

b. Appointment will be made without a report of physical examination (WD AGO Form No. 63). Authority is granted to waive the provisions of Section VI, AR 605-10.

c. Applications and accompanying papers as prescribed in AR 605-10 (except report required by paragraph 10a (2) (b), as amended, will be forwarded by the dean of the medical school to the commanding general of the corps area in which the school is located, together with a certified statement that the applicant is a bona fide accepted matriculant in medicine at the institution.

d. Students attending schools outside the limits of the United States will be charged with the responsibility of proper notification to the deans of the respective schools in order that the applications and accompanying papers as prescribed in paragraph 2 c (above) are forwarded to the commanding general of the corps area of permanent residence of the student.

e. Officers appointed under the provisions of this letter will be discharged for the convenience of the government under the following circumstances:

(1) Discontinuance of medical education.

(2) Matriculation at an unapproved school of medicine.

(3) Failure to complete successfully the prescribed full course of medical instruction.

(4) Failure to secure appointment in the Army of the United States (Medical Corps) within one year after completion of the prescribed full course of medical instruction.

f. The Surgeon General will maintain adequate records to assure timely application for appointment as first lieutenant, Army of the United States (Medical Corps), and to assure that individuals are promptly reported to the Adjutant General for discharge as provided above.

3. Properly certified applicants for and qualified students at approved schools of medicine, dentistry or veterinary medicine who already hold Reserve commissions in other arms or services will not be ordered to active duty until they:

a. Come within the provisions of 2 e (1), (2), (3), or (4) above, or

b. Successfully complete the prescribed full course of medical instruction, in which latter event they may be appointed in the Medical Corps, Army of the United States, in the grade of first lieutenant.

4. Properly qualified students will be invited to submit applications for appointment, final approval in each case to be made by the commanding general of the corps area in which the properly qualified student maintains permanent residence. The commanding general of each corps area is granted the authority to make such appointments.

5. Notice of appointment will be in the following form:

Date

Subject: Temporary Appointment.
To: 2nd Lieut. John Henry Doe, MA-AUS, A 0-0,000,000
549 North Blank Street, New York, N. Y.

1. By direction of the President you are temporarily appointed and commissioned in the Army of the United States, effective this date, in the grade and section shown in address above. Your serial number is shown after A above. You will not perform active duty under this appointment until expressly ordered to active duty by competent authority.

2. This commission will continue in force during the pleasure of the President of the United States for the time being, and for the duration of the present emergency and six months thereafter unless sooner terminated.

3. There is enclosed herewith a form for oath of office which you are requested to execute and return promptly to the agency from which it was received by you. The execution and return of the required oath of office constitute an acceptance of your appointment. No other evidence of acceptance is required.

4. This letter should be retained by you as evidence of your appointment, as no commissions will be issued during the war.

6. Each appointee will be in the Arm and Service Assignment Group. On each copy of notice of appointment except the original a notation "A. & S. A. G." will be placed in the lower left hand corner.

10. If an appointment is declined or canceled, the record will be filed at corps area headquarters and no report made to this office or to that of the Surgeon General.

11. Department commanders will, in general conformity with this letter, submit to this office individual recommendations for appointment.

12. The letter from this office of Feb. 11, 1942, AG 210.1 Med-Res. (1-26-42) RB-A, Subject: "Commissions for Medical Students," is rescinded except paragraph 5 thereof.

By order of the Secretary of War:

J. A. ULIO,
Major General,
The Adjutant General.

Carcinoma of the Cervix—Surgery for all practical purposes has reached the point where no further improvement can be expected, except for the perfection of some individual surgeon's technical skill. Likewise, the same level is rapidly being reached by radiotherapy. It, therefore, behooves us as medical advisors to search deeper for another cure for this death-dealing disease. That cure is very easy to advocate but hard to institute. Prophylactic measures, when thoroughly established, will decrease the mortality rate many fold, more than surgery and radiotherapy combined. We must educate our women to have regular examinations. Physicians must once and for all examine every woman who comes to their offices. Biopsies must be taken on the least suspicious lesions. Infected cervixes must be treated adequately and every possible effort used to eradicate all discharges. Women must be examined and none should receive a prescription for the "change of life" without such an examination, and, remember that the vaginal speculum is the most valuable instrument we have in our armamentarium for the diagnosis of cervical lesions.—*Kelso, South. M. J., May 1942.*

THE JOURNAL

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IMMEDIATE FEEDING VERSUS INITIAL STARVATION IN THE TREATMENT OF BLEEDING PEPTIC ULCER

Eichorn¹ compared the results of initial starvation followed by a progressive Sippy diet with the Meulengracht regimen in the treatment of 81 patients with bleeding peptic ulcers admitted to the Cleveland City Hospital from January 1936 to April 1941. He found that "among the 43 patients treated by initial starvation, 8 died, a mortality of 19 per cent. In the second series of 38 patients, treated by immediate feeding, there were no deaths. . . It will be noted that the patients who were fed at once regenerated blood more rapidly than the survivors among the starved ones. The average period of hospitalization of the earlier series was 29 days, as compared to 25 days for the later series. Three patients had hematemesis during the starvation period and more than 24 hours after admission. None of the patients who were fed on admission vomited blood more than 24 hours after treatment was started."

Eichorn states that "in 1932 Meulengracht of Copenhagen first advocated the system of treatment that bears his name. Meulengracht, who has never referred a bleeding

patient for surgery, believed it to be fundamentally wrong to withhold food and drink from patients in a condition of posthemorrhagic shock. He stated as his reasons for advocating the feeding of these patients, first, that patients often die in spite of rigid diet or the complete withdrawal of food; second, that patients have been observed to stop bleeding and recover from their anemia although they remain ambulatory and do not seek treatment; and lastly, that a diet deficient in vitamins and calories does not promote either the healing of ulcers or the regeneration of blood. In analyzing the results of cases treated by the old method he found that most of them died about the eighth day, which was exactly the average number of hospital days of the fatal cases in this series. He postulated that many of these patients died from sheer exhaustion. He also pointed out that patients were more comfortable and that the nursing care was easier and the hospital stay shortened when the patients were fed. Other authorities have advanced further reasons for the use of liberal feeding. Lanphere, in particular, emphasized that a high carbohydrate diet and protein intake tends to protect the liver and to prevent acidosis. Others have suggested that free hydrochloric acid in an empty stomach delays the healing of ulcers."

Eichorn says that "since July 1939 all patients with bleeding ulcers have been treated with frequent nutritious feedings from the time of admission. Patients who vomit food or blood are refed. The foods are selected by the dietetic staff from a large assortment of vegetables and fruits, all cooked and strained, and each patient is given 100 cc. of orange juice daily for the vitamin C content. Cereals, crackers, wafers and toasted bread are all allowed, and eggs are used freely, prepared in any way except by frying. Meat or fish, which is baked, boiled or broiled, is given daily from the beginning. The patients are given cream soups, any beverage except coffee, and such desserts as custards, puddings, jello or ice cream. In addition to their diet these patients received 0.7 gm. of ferrous sulphate 3 times a day and nine 4-cc. doses of aluminum hydroxide in 24 hours. Patients are required to take 3000 cc. of fluid daily. Blood transfusions are given freely when the erythrocytes are under 2 million, when there is evidence of shock, or when the blood urea nitrogen is elevated."

1. Eichorn, J. P.: Immediate Feeding Versus Initial Starvation in the Treatment of Bleeding Peptic Ulcer, Am. J. M. Sc. 203: 428, March 1942.

For several years one school of thought has maintained that feeding rather than starvation is the best method of treating hemorrhage from the stomach, be it due to ulcer or other lesions. The issue is still far from being settled, but studies such as those of Eichorn are certainly a means to this end. His series is not a large one, but his observations are scientific and thorough and it is to be hoped that his results can be confirmed by other clinicians. Certainly it will be a happy day for the horde of sufferers from peptic ulcer if they can be freed from the rigors of starvation and Sippy diet regimen. And this will come about if the profession as a whole becomes convinced that "immediate liberal feeding results in, first, a greatly lowered mortality rate, second, more comfort for the patient, and, finally a shorter hospital stay."

Committee Contributions

Prevention of Cancer

CANCER CLINICS FOR INDIGENT PATIENTS

Nearly every day inquiries are made by doctors, social agencies or patients as to what facilities are available for treating patients with cancer, who do not have the means to pay for this expensive treatment. Except for a few communities of the state, treatment is not available for indigent cancer patients. Cancer is one of the leading causes of death. About 1,700 carcinoma deaths are recorded each year for Alabama. If facilities for treating these cases could be provided, experience has shown that a large number of these deaths might be prevented and a great deal of suffering alleviated.

The setting up and operation of the facilities for the proper treatment of cancer involves too great an expense for physicians or hospitals depending on their income from the few patients who can afford to pay even a reasonable fee for this service. Radium, x-ray and other equipment costing thousands of dollars must be provided. There is need for a plan to support the operation of facilities for adequate therapy for all cancer patients who would be helped by treatment.

In some neighboring states, Georgia and South Carolina, plans for state-wide treatment of cancer are already in operation.

Clinics have been established where physicians can send their patients with cancer for adequate treatment. These plans provide facilities for those who cannot afford to pay and at the same time provide better treatment for patients who can pay.

The Georgia plan has been in operation for about six years. The State Legislature has appropriated money to pay for the treatment of cancer cases under a plan administered by the Cancer Control Service functioning under the State Health Department. Twelve diagnostic and treatment centers have been established in the general hospitals throughout the state conveniently situated with respect to accessibility.

The practicing physicians refer their indigent cancer patients or patients suspected of cancer, who in Alabama go without treatment at the present time, to the Cancer Control Service of the State Health Department. The Service and the Welfare Department pass on the eligibility of the patient and refer him to the nearest diagnostic and treatment center. Two thousand one hundred and sixty-two applications were approved and referred to the clinics by the service in 1941.

South Carolina, at the 1941 St. Louis meeting of the Southern Medical Association, presented its plan for treating indigent cancer patients, which is similar to that of Georgia.

It is hoped that Alabama can in the not too distant future have funds for the operation of a similar plan to offer treatment to indigent cancer patients.

Maternal and Infant Welfare

ALABAMA ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

The Alabama Association of Obstetricians and Gynecologists recently held its third annual meeting in Montgomery. One of the objects of this Association is to initiate, or to assist with, efforts to lower the maternal mortality rate for Alabama. The national emergency has curtailed certain activities of this Association but one significant study was reported this year. This study pertains to obstetric facilities and obstetric practices in Alabama hospitals, as revealed by questionnaires. A summary of some of these data is published herewith. Inasmuch as the As-

sociation represents a fair cross section of specialists and general practitioners interested in maternal welfare, we believe our comments and suggestions are both sincere and timely.

1940				
Hospital	Comments	Number of Deliveries	Maternal Deaths Per 100 Deliveries	Cesarean Section Incidence
1.		182	0	0
2.		159	0	0
3.		82	0	0
4.		82	0	0
5.		115	0	1
6.	(6)	524	0	1.3
7.	(1-6)	485	0	3.0
8.	(2)	109	0	3.6
9.	(4)	84	0	7.1
10.	(1-2-3-4)	98	0	9.1
11.	(1-2-5)	301	0.26	0.26
12.	(1-2)	342	0.29	1.4
13.		1009	0.3	1.5
14.	(1-5)	278	0.35	2.1
15.	(6)	698	0.44	3.4
16.	(1-2-3-4-5)	222	0.45	7.2
17.	(1)	658	0.6	4.2
18.	(1-2-3-4)	150	0.75	8.6
19.	(1-2-3-4)	230	0.8	10.0
20.	(5)	2195	0.82	0.72
21.		121	0.82	1.6
22.	(1-4)	---	1.20	2.4
23.	(6)	543	1.6	1.0
24.	(1)	201	2.0	4.0
25.	(1-2-3-4)	90	2.2	8.8
26.	(1-2-3-4)	549	2.3	5.3
27.	(3-4-6)	90	3.3	7.7
28.	(1-2-3-4-5)	287	-----	3.1

Many of our Alabama hospitals are accredited by the American College of Surgeons. This recognition implies the maintenance of certain specified minimum standards of facilities, policies and practices. This Association finds that certain of these minimum standards are not maintained by many of our hospitals and lists the following examples:

1. Each hospital accredited by the American College of Surgeons should have a duly appointed and recognized head of the Department of Obstetrics. If possible, this man should be a recognized specialist in obstetrics. He should, in fact as well as in theory, exercise some active supervision over the efficiency and type of obstetric work actually performed in his institution. He should have the authority to criticize and to correct obvious errors in obstetric practices which materially endanger the life and health of obstetric patients.

2. Each accredited hospital should appoint and publish a list of reputable consultants in

obstetrics. The hospitals should, furthermore, require a consultation with any one of these consultants before the performance of any major obstetric operation, especially that of cesarean section. By this means many unnecessary obstetric operations may be avoided. Modern Eastern hospitals have been doing this for years and our Alabama hospitals should follow suit.

3. Cesarean section is frequently a life-saving measure. It is also a frequently abused and often ill-advised operation. Inasmuch as this operation carries a mortality of from one to 9 per cent, with a fair national average of approximately 5 per cent, the advisability of resorting to this operation should, if possible, be determined by competent specialists. Any hospital with a cesarean section incidence over 5 per cent is allowing unnecessary cesarean operations.

4. The same crew of nurses should not scrub for obstetric deliveries who also scrub for purulent surgical cases, and, by the same token, clean obstetric cases should not be mixed with infected surgical patients and cared for by the same general duty nurses.

5. Competent anesthetists are just as essential for a safe obstetric anesthesia as they are for a safe surgical anesthesia.

6. Few hospitals in Alabama offer modern facilities for the care of normal newborns and premature newborns.

It is the sincere hope of this Association that these constructive criticisms of some of our hospitals will be received in the same spirit in which they are made, namely, the advancement of safer obstetric practices in Alabama. We realize that the hospital factor is not the most important one in our effort to improve maternal mortality figures in this state, but we also realize that this hospital factor is one which should be most amenable to improvement or correction.

Pneumonia—The need for oxygen in treating pneumonia patients is not so great now as it was before the advent of chemotherapy. A great saving to the patient has been realized in this item alone. However, there are occasional patients who will do better with oxygen. It is especially indicated in certain cardiac cases and often adds materially to the comfort and sense of well-being of the patient. If the oxygen tent is not available the results obtained by giving oxygen through the nasal tube are quite satisfactory.—*Dimmock, J. M. A. Georgia, May 1942.*

TRANSACTIONS OF THE ASSOCIATION

1942 SESSION

(Concluded)

Last Day, Thursday, April 23

The Association, sitting as the Board of Health of the State of Alabama, was called to order at 8:30 A. M. by the President, Dr. J. M. Mason.

The report of the Board of Censors was rendered by the Chairman, Dr. E. V. Caldwell of Huntsville.

THE SIXTY-NINTH ANNUAL REPORT OF THE STATE BOARD OF CENSORS, INCLUDING ITS REPORTS AS THE STATE BOARD OF MEDICAL EXAMINERS AND AS THE STATE COMMITTEE OF PUBLIC HEALTH

E. V. Caldwell, M. D., Chairman

The Board of Censors submits herewith its Sixty-Ninth Annual Report.

PART I

AS A BOARD OF CENSORS

MEDICINE AND THE WAR

The year just closing has, perhaps, been the most important since that following the entrance of this country into the first World War in April 1917—twenty-five years ago. Today we are actually and actively engaged in a much wider and more devastating world conflagration. Looking to such an eventuality, the medical profession in this country began two years ago efforts at organization for active military service. The results obtained fell so far short of the goal set for itself as to be most discouraging. It was only through the untiring efforts of the Committee on Medical Preparedness of the American Medical Association, functioning through its state committees, that a semblance of a complete survey of the medical profession in this country was completed in about eighteen months. Because of the seeming inability to complete this task, and to work out with the War Department and the other interested agencies plans for deferment of call to active duty of much needed medical men, and of the medical students, it is believed that the following statement made by Brigadier General Charles C. Hillman, Chief of Professional Service Division, Office of the Surgeon General of the United States Army, March 4, 1942, before the war sessions hospital conference of the American College of Surgeons, convening in Nashville, Tennessee, is most encouraging and will be of interest to this body:

"We'll be able to meet the new demands made of us. The Army has been short 1,500 medical men in recent months but we'll soon be adequately supplied. Our Army soon will have as many

doctors in proportion to the armed forces as there were in the first World War."

He further declared, in reference to the medical graduate today, "He might as well make up his mind to go into the Army—he'll be there anyway and without delay," stating that the majority of this year's 5,000 medical graduates would be absorbed by the Army or other branches of the service.

General Hillman went on to state: "Of the 24,000 medical men needed this year, 12,000 already are in the ranks. In addition, 1,700 more dental officers are needed immediately to augment the 3,300 dental personnel in the Army ranks, and 9,000 more nurses are needed."

PROCUREMENT AND ASSIGNMENT SERVICE

The program, with all records of the Committee on Medical Preparedness, was turned over during the year to the Procurement and Assignment Service. The functions of the Procurement and Assignment Service for physicians are carried out through committees set up in Army corps areas, states, districts and counties with an Army physician in Washington, D. C., assigned to serve as executive officer. Your Board of Censors serves as the committee in Alabama, with the Acting State Health Officer as chairman. Each of the four vice-presidents of the Association serves as chairman of his respective district committee. The county board of censors or physicians appointed by that board serve in each county.

The following quotations are taken from Procurement and Assignment Service bulletins: "In general every man under 36 who is physically fit should volunteer for active service in the Army or the Navy, if he is now or can be made available. The Procurement and Assignment Service expects that the present needs of the armed services for medical personnel will be filled by those under 45. Other age groups will be held in readiness to fill requisitions when their services are desired. All physicians over 45 will be asked to enroll with the Procurement and Assignment Service at an early date. Those who are essential in their present capacities will be retained and those who are available for assignment to military, governmental, industrial or civil agencies may be asked by the Procurement and Assignment Service to serve those agencies. The maximal age for original appointment in the Army of the United States is 55. The maximal age for original appointment in the Naval Reserve is 50 years of age."

"All male physicians under the age of 45 are liable for military service and those who do not hold commissions are subject to induction under the Selective Service Acts." In other words, even though a physician under 45 is classed as essential by the Procurement and Assignment Service, he

is still accountable to his local Selective Service Board.

"The whole-hearted cooperation which has been received during the early period of the Procurement and Assignment Service has been a source of gratification to the Directing Board." It is hoped, and believed by the Board, that the physicians of Alabama will do their part in this crisis as they have always done.

BLOOD TESTING OF REGISTRANTS FOR SELECTIVE SERVICE

The need for manpower in the armed forces of the Nation has focused attention on the physical disabilities of men in the draft age. One of the common causes of rejection is the existence of a venereal disease which has not been adequately treated. The treatment of syphilis is a long process so that men started on treatment now will not be available for service this year. The examination of Selective Service registrants carried out in October-December 1940 revealed many of the infections in this age group and has enabled large numbers to begin treatment prior to their call for induction. Out of approximately 200,000 men tested in this survey over 17,000 were found to have a positive blood test. Of the white men examined 1.5 per cent had positive tests, while 19.8 per cent of the Negroes were positive. It is incumbent on the medical profession to see that all these men are given adequate treatment. While the clinics operated jointly by the health department and medical societies to care for the indigent will require additional time on the part of the clinicians, those patients coming from private care must be encouraged to take treatment.

EMERGENCY MEDICAL SERVICE IN CIVILIAN DEFENSE

A major contribution to civilian defense is being made by the medical profession and related groups, including health forces and nurses. To coordinate this work at the state level, a state director of emergency medical service was appointed in the person of the State Health Officer but, because of the extent of the work involved, it was necessary that he delegate the details of the program to an assistant director.

The work of the assistant to date has been directed towards evaluating the progress made in the organization of emergency medical service in vital areas of the state. In doing this, a number of these have been visited, and local directors and other responsible persons interviewed. When possible, practice drills have also been attended. The three major areas in Alabama—Birmingham, Mobile, and Montgomery—have been given the most attention. Due to the fact that these communities began to organize their civilian defense preparations shortly after December 7, and because the medical profession organized rapidly and completely in these cities, no uniform pattern of organization has been followed. In Mobile, emergency field units working from casualty stations have been organized and fifteen of these units are now active.

In Birmingham, first-aid units only have been organized throughout the county and 141 of these units have been formed.

In Montgomery, the emergency field service units have been organized around hospitals, and at the time of the last drill five groups were represented.

In all three cities certain personnel has been assigned to hospital duty. Ambulance service has also been organized. Nurses have been assigned to the various units. The medical profession throughout the state has also been aiding in first-aid instruction.

As of March 20th, the assistant director had visited the organizations in eight counties, in addition to the three mentioned above; and visits to five other counties were made between the 20th of March and the 1st of April. Some of the smaller communities have not yet organized and the assistant director attempts to outline suitable plans in these areas and offer whatever assistance he can.

In Mobile the physicians and the hospitals have cooperated in sponsoring a blood bank, and similar units are being organized in Birmingham.

In order to care for overcrowding or possible necessity for evacuation because of damage to hospitals, a survey to determine feasible base evacuation hospitals has been made with a view to transportation facilities and relative safety from attack. The proposed plans have been submitted to the regional director for approval. A more extensive survey is planned for the near future and a system of reporting available space has been suggested so that in case of emergency some information concerning beds in adjacent cities will be available.

Considerable medical supplies are to be provided for the chief urban centers of the state and much of the responsibility for their care will fall on the State Director of Emergency Medical Service.

In addition to the work throughout the state, the assistant director has had occasion to attend regional emergency medical service conferences in Atlanta. Likewise the Regional Director of Emergency Medical Service will pay periodic visits to the state to aid in the program and to evaluate the organization. The assistant director will accompany him on these visits. Inasmuch as a certain amount of interstate work may have to be done, particularly in areas such as Mobile where units from Mississippi might be called in for aid or where units might be called to other locations such as Pensacola, close cooperation with the regional office of Emergency Medical Service is essential.

Although not yet available for general release, the program of emergency medical service will eventually be quite wide in scope and it is evident that for some time to come it will require the full-time work of at least one person.

FEDERAL WORKS AGENCY

The Act authorizing the establishment of the Defense Public Works Division of the Federal Security Agency provides for the acquisition, construction and equipment of defense public works. Defense public works are described as facilities

necessary for community life substantially expanded because of the National Defense Program. These activities are devoted primarily to such projects as hospitals, health centers, waterworks, sewers, sewerage, garbage and refuse disposal facilities, public sanitary facilities, works for treatment and purification of water, schools, recreational facilities, streets and access roads.

Loans and grants for such projects may be made to public or non-profit private agencies. Numerous applications for facilities have been sent from Alabama. A few have been approved for building health centers, schools, hospital additions and improvement of water and sewer systems. Plans for projects must be drawn by participating agencies, representing the local community, signifying the extent to which they will participate, indicating the needs, and showing how the defense activities have substantially increased needs for the added facilities.

THE 1941 EPIDEMIC OF POLIOMYELITIS

Early in the summer of 1941 poliomyelitis was reported as being epidemic in Florida and in Georgia. Late in June it became apparent that Alabama too was going to be involved in this outbreak. Starting later than our sister states the number of diagnosed cases increased rapidly and eventually surpassed the recorded incidence in any Southern State. Cases were reported from widely separated parts of the state but it was soon apparent that the center of the epidemic was in Walker and Jefferson Counties with some of the other northern counties showing high incidence rates. There were reported 871 cases as compared with 391 in the 1936 epidemic.

The control measures instituted included the usual ones of isolation and quarantine and the restriction of public gatherings and travel. For the care of the cases the health departments and the Crippled Children's Service worked very closely. Aid in diagnosis was furnished where needed and nurses skilled in the use of splints and exercises visited all cases where such services were requested. A number of communities purchased respirators while four additional respirators were loaned to the state by the National Foundation for Infantile Paralysis. The clinics of the Crippled Children's Service are now treating many of the after-effects of the epidemic.

The National Foundation for Infantile Paralysis sent certain of its staff advisers to Alabama and they selected Walker County as a center for study. A laboratory, including a monkey colony, was established in Jasper so that laboratory studies could proceed jointly with the field epidemiology. It is believed that valuable contributions to the whole problem of poliomyelitis may result from these studies. The transfer of the disease to a monkey from flies captured in the vicinity of active cases was successfully carried out. This is the second time such an attempt has proven successful and is at least indicative of one of the possible methods of spread. Further reports may be expected on other phases studied.

RESEARCH AND SPECIAL ACTIVITIES

LABORATORY FOR RABIES RESEARCH

This study is conducted by the International Health Division of the Rockefeller Foundation in cooperation with the State Department of Health.

Due to a widespread and alarming incidence of rabies in Alabama, the State Legislature in 1937 passed a rabies control act requiring that all dogs must be given one injection of rabies vaccine each year. Since this law went into effect there has been a marked reduction in the incidence of rabies in Alabama. It was, however, apparent that other sanitary regulations may have played a part in the regression of the disease as the law also provided for the destruction of stray dogs which have in the past played an important part in the propagation of rabies. Then, too, decrease in incidence of the disease may, to a certain extent, have been due to natural causes related to the virus itself.

Human rabies cases and animal heads found positive for rabies at the Alabama State Health Department and available data as to the number of dogs vaccinated, impounded and killed, 1931-1941, are as follows:

Year	Human Rabies Cases	Rabies Positive Animal Heads	Dogs Vaccinated	Dogs Impounded	Dogs Killed
1931	3	613			
1932	2	836			
1933	5	837			
1934	4	1,017			
1935	4	977			
1936	2	883			
1937	3	927	177,038		
1938	2	677	155,092	13,767	20,416
1939	3	237	159,578	9,310	15,158
1940	1	202	101,237	5,494	5,149
1941	1	169	113,973	3,422	2,659

The reduction in the incidence of rabies in this state during the past three years warrants continued and increasing vigilance in enforcing the existing dog control regulations. Every effort should be made to apprehend ownerless dogs. In districts where rabies is known to be present, owned dogs should be quarantined. This would necessitate that dogs be confined to an enclosure or kennel unless on leash or under the direct control of the owner. The latter is necessary in order that contact with strange dogs can be prevented. It is entirely possible to eliminate the disease by these measures.

Experimental studies at this laboratory have borne out the value of dog vaccination as it has been shown that one injection of canine rabies vaccine containing no demonstrable virus will afford dogs considerable protection against experimental infection with rabies street virus. All vaccines were not equally satisfactory so subsequent studies have been attempted in order to determine what type of vaccine is best and how long the vaccine will retain its antigenicity. To date it has been shown that rabies vaccine inactivated with chloroform and containing 33 1/3 per cent brain material will retain its antigenicity for at least one year if stored in an ordinary re-

frigerator. This type of vaccine could not be satisfactorily preserved by freezing and drying in vacuum. Vaccines inactivated with phenol were equally efficacious as those inactivated with chloroform provided they were not subjected to incubation and contained the same concentration of brain material.

During 1941 this laboratory continued the epidemiologic study of the epizootic of fox rabies in Georgia which began in July 1940. The epizootic ended in April 1941. During the rest of 1941 there were only three isolated cases of fox rabies. Specimens were obtained from foxes killed when obviously rabid and also those killed in the hunting and trapping program. A total of 420 fox brain and salivary gland specimens were studied and 147 foxes were found to have had rabies. There were eleven cases of fox rabies in Alabama in 1941. These occurred sporadically from January to November 1941 and were limited to Dale and Henry Counties.

The continuation of rabies in nature depends on the ability of the virus to invade the salivary glands of infected animals. It has been found that animals naturally infected with rabies do not always have the virus in the salivary glands. Rabies street virus strains obtained from Georgia at different times during the epizootic of rabies in foxes varied in their ability to invade the salivary glands of experimentally infected mice. Rabies virus fixed for rabbits by continued intracerebral passage is rarely able to invade the salivary glands of experimentally infected animals. Epidemiologic studies suggest that rabies street virus may take on the characteristics of fixed virus by rapid passage in nature and so causes the disease to be in part self limited.

During the past year it has been possible to prepare frozen and dried rabies virus of high titre which maintains its virulence when stored at -25° C. The development of a standard virus has materially increased the accuracy of serum neutralization and vaccine potency tests in mice.

In order to secure uniform results from rabies vaccination it is necessary to have a laboratory test to check the antigenic potency of each new lot of vaccine. The mouse potency test now in use at commercial laboratories does not give consistent results. The production of a standard virus has made it possible to test vaccinated mice with a definite number of intracerebral MLD of virus. By this method it may be possible to develop an accurate potency test for rabies vaccine.

A specimen of vampire bat rabies virus was obtained from Venezuela, South America, in 1941. This virus is antigenically related to the rabies virus strains isolated in the United States. Animals inoculated with the South American strain of rabies virus characteristically develop the paralytic form of rabies. Domestic animals infected with this virus strain do not propagate the disease among themselves. The vampire bat is a dangerous vector as its sole diet is fresh blood and infected bats may remain carriers for months without clinical evidence of infection.

Serial intracerebral passage of rabies virus in baby chicks for fifty generations has resulted in a slight decrease in virulence of this virus for the dog.

CULLMAN COUNTY MATERNITY SERVICE

This service has continued to improve. Five public health nurses are employed and a satisfactory program, combining this specialized service with the generalized public health program, has been carried out. There were 290 maternity cases registered in 1941, representing about 30 per cent of the total births of the county. The quality of the nurses' services has been improved. Hospital deliveries increased to 158 in 1941, an increase of 38 over 1940. A new hospital partly accounts for this. During the same period, midwife deliveries decreased from 17 per cent to 10 per cent.

SLOSSFIELD MATERNITY SERVICE

This maternity service for colored women was started in Jefferson County in July 1940 and has steadily improved in volume and type of service. In 1941 there were 429 patients delivered, an increase of 309 over 1940. Of these, 247 were in the home and 182 in the hospital. There were no maternal deaths among those delivered at Slossfield. Only patients who register before the seventh month of pregnancy are accepted by the maternity service.

BABY SPACING

The work of baby spacing has progressed satisfactorily. The program was presented to 26 county medical societies and 20 counties now have clinics giving this information, an increase of 14 counties over 1940. An estimated number of 1,200 patients have received this service.

TUSKEGEE SCHOOL FOR TRAINING NURSES IN MIDWIFERY

This school was started in the autumn of 1941 and is a development of the nurse midwife delivery service already functioning in Macon County. The Tuskegee Institute provides a building on the campus. A white nurse midwife instructor loaned from Lobenstine inaugurated the school. There are at present three colored student nurse midwives. They graduated in March 1942 after six months of training in midwifery. During the short time this project has been under way, the number of "granny midwives" has been reduced from 120 to 27. In 1941 the nurse midwives delivered 177 of the 722 deliveries in Macon County.

FELLOWSHIPS IN PUBLIC HEALTH OBSTETRICS

In August 1941 the Children's Bureau set up two fellowships a year in public health obstetrics for obstetricians to learn about the various phases of state maternal and child health programs. Three courses are offered: (1) the one-year fellowship; (2) the three months' orientation course for obstetric consultants from other state health departments; and (3) the three months' field observation course for obstetricians in training. Considerable publicity has been given to the course through announcements in various medical journals. Thirteen applications have been received. One obstetric consultant has taken the shorter orientation course. One scholarship was awarded effective March 1, 1942.

STATE LEGISLATION

It is anticipated that when the Alabama Legislature meets next January there will be many bills introduced for the benefit of individuals or groups, and at the same time having real significance to the health and medical professions. The accomplishments of some of these bills might prove detrimental to the best interests of society. Furthermore, legislation will be sponsored by the Association and its health department which should have the approval and intelligent support of the profession. The Board is calling attention to the matter at this time to urge all members to keep themselves informed as to policies, aims and legal responsibilities of this Association.

An excellent way to assure favorable legislation for the profession and society is to see that our law-making body is composed of persons who are kindly disposed toward physicians, human welfare and progress. Your wise and sane counsel will be needed for legislators to act favorably and intelligently on all health and medical questions which will claim their attention as our law-makers.

APPROPRIATION FOR HEALTH WORK

The present annual legislative appropriation for general public health work in Alabama is \$430,000 with authorization for an additional amount of \$25,000 to be allocated at the discretion of the Governor. This is \$231,000 less than it was in 1931. The Board directs attention to the fact that every county now has a full-time health department compared to 53 in 1931 which calls for greater needs for state subsidy. There are many more demands for health services. Additional funds are required to match federal allotments for health work and expansion of activities as indicated in many phases of the health program. It is, therefore, recommended that an additional annual appropriation be made available to the State Health Department from state funds in the amount of \$100,000 for the first year, \$125,000 for the second year, and \$150,000 annually thereafter.

CANCER CONTROL

Cancer has become one of the greatest killers in Alabama. With a rate of 63.2 it stood fourth from the top as cause of death in 1941. Heart disease, nephritis and intracranial lesions were the first three in the order named. Every physician knows the importance of early diagnosis with the institution of prompt and efficient treatment to effect a cure for cancer. It is also well known that many persons who have cancer are unable to pay for examination and proper treatment. Recognition is given to the valiant services being rendered by the Association's Committee on Cancer Control and by the Women's Field Army of the American Society for the Control of Cancer. However, these are not enough and it will require additional funds to cause any marked reduction in the number of deaths caused by cancer. It is, therefore, recommended by the Board that an act be introduced into the Legislature to secure an annual appropriation for carrying out the cancer control program.

ALABAMA DISTRICT TUBERCULOSIS SANATORIA

At the last meeting of the State Legislature an annual appropriation of \$75,000 was made to carry out the provisions of the state subsidy act for tuberculosis. At that time it was felt that this sum would be adequate to allow 75c per patient day for those under treatment in the various county sanatoria. Stimulated by the promise of financial support, however, there has been a considerable expansion in the number of beds available and today there are approximately 485 beds for the care of tuberculosis patients in the state. Eight county or district sanatoria are in operation and are attempting to meet the demand for hospital care. With a fixed appropriation and an expanding bed capacity the per diem allowance from the state has fallen steadily until it is now little more than 50c per patient day. The sanatoria should be subsidized at least \$1 per day per patient. There should be increased appropriation to enable existing sanatoria to run at capacity and to encourage the construction of new facilities. We, therefore, recommend to the Legislature of 1943 that, for the hospitalization of the tuberculous, \$150,000 be made available in the first year, \$175,000 the second year, and \$200,000 annually thereafter. Alabama has approximately 1,500 deaths a year from tuberculosis and existing standards recommend at least one bed for each annual death. Facilities for pneumothorax refills should also be available at numerous points in the state.

The several recommendations of the Board relating to legislation were approved by the Association.

WORK OF FEDERAL AGENCIES

FARM SECURITY ADMINISTRATION

The following is a general report of the health improvement work carried on by the Farm Security Administration, with the help of the state and county medical societies and the participating physicians, in Alabama during 1941. We feel that this report may be of interest to members of the medical societies of Alabama.

Since it is only the low income families who cannot obtain financial aid elsewhere that Farm Security Administration is working with, we have found that it is impossible to rehabilitate a family financially and mentally when, from a physical standpoint, this family remains in a dire state of need. The Farm Security Administration is not placing undue emphasis on medical care as such but is trying to approach the problems of each family on a broad basis, which includes improvement of environmental sanitation, nutritional work, adequate housing, public health facilities and health education, as well as improvement of economic circumstances.

In order to approach such a general group of problems, the Administration has trained workers, both men and women, serving as farm and home supervisors in an effort to work out definite plans at the beginning of each year and supervise the work of these families in order that they may more nearly follow through the entire plan as set up at the beginning of the year, as

well as the making of loans at the beginning of a year and collecting amounts due at the end of each year. In making a farm and home plan at the beginning of the year, it is impossible to set up a budget for medical care on an individual family basis, this being due to the fact that we can never tell in advance the character or seriousness of an illness that may befall any family or members of the family. In order to cope with this situation, we feel that budgeting on a group basis with our families offers a solution of the problem by spreading the cost of necessary medical care so that it falls on the entire group of participating families rather than upon any individual family, who in most instances would not be able to take care of their medical bills should they be willing to sell all of their worldly goods and apply the amount received to their medical bill. Also, we find that by budgeting on a group basis for medical care the physicians are paid each month for their services and this eliminates the problem of slow and uncertain collections which exist in most counties from this low income group. Then, too, we have found from contacts with both physicians and members of FSA personnel that families who have had medical care available on this group basis have shown a decided improvement in their health conditions, their ability to do more work on the farm and a noticeable improvement has been shown by the children in their school work.

We have found from past experience that much can be done to reduce the need for medical services for these low income families by an improved diet. During this past year both farm and home supervisors of the Administration have stressed the importance of the families providing themselves with the foods needed for a proper diet, as nearly as possible. As a result of this work more FSA borrower families have planted a year-round garden in order that they may be able to have vegetables needed for a proper diet. In addition to providing fresh vegetables for the families, they have canned a total of 6,080,713 quarts of fruits, vegetables and meats during 1941. This produce came from their own gardens and orchards which had been planned and provided for in their farm and home plans which were made at the beginning of the year. This is an average of 271 quarts per family and we feel that this means much in the way of providing preventive medical needs during the winter months when there is not a variety of fresh vegetables available in their home gardens.

Since environmental sanitation is a definite step toward preventive needs, the FSA, with the cooperation of the State Health Department, has been enabled to help the farm families within the state by providing the funds and supervision for the construction of 13,585 sanitary privies, 2,730 screened homes, and 1,285 homes with a protected water supply. During the latter part of 1941, the Administration, through personnel in the counties, has organized the Farm Security borrower families into neighborhood groups in each county within the state. The principal objective of organizing these groups has been for the purpose of being able to do a better job of educational work with the families, which is im-

possible to do on an individual basis. Through working with these organized groups, which meet regularly, we feel that the personnel will be able to help educate families and avail themselves of all services offered by the local health departments which are, in a sense, providing preventive medicine.

Since medical and dental needs are so closely related in the improvement of health conditions, the Administration during 1940 sponsored a group dental program. During this year the number of dental programs in operation in the state of Alabama reached a total of 29 counties, with dental groups in other counties having indicated their desire for a program of this type for their counties for the year 1942.

In order to provide medical care to these families for an amount within their ability to pay the Farm Security Administration has since early 1938 sought the cooperation of county medical societies throughout Alabama in carrying on group medical plans. The number of counties in which the plan operated has increased substantially each year since the beginning. The following table shows this increase:

<i>Year</i>	<i>Counties</i>	<i>Families</i>	<i>Individuals</i>
1938	4	868	4,330
1939	24	10,288	55,640
1940	35	12,586	69,223
1941	41	16,991	81,544

The plans differ slightly from county to county, but all provide the same service, i. e., practitioner care, necessary drugs and emergency hospital care. As a rule these minor variations in methods of handling are made to meet some specific local condition and has caused the program to be more workable and satisfactory in these counties. This is very encouraging since four counties, which had previously discontinued the program, voted it back in for 1941.

As a result of the group organizations, which were mentioned above, the personnel of the Administration has been able to do a more effective job in controlling the abuses of the medical program by some of the borrower families. The personnel in every county has signified its desire to help control any abuse by any family of the medical program in their respective counties. It will be appreciated by all concerned if any physician will report any family to the county supervisor who has been abusing the medical and dental program in any way.

We realize that during the emergency, in which we are all concerned, there is going to be an increased amount of work on physicians in a goodly number of counties where the number of practicing physicians has been reduced due to the call to service of some of their fellow physicians. All of us want to shoulder our full responsibility during this emergency and more than ever we realize the need for improved health conditions for every man, woman and child in the United States. The Farm Security Administration borrower families within the United States have responded 100 per cent to the call of our government for the increased production of certain foods needed by our country at this time. We trust

that through the cooperation of the state and county medical societies and participating physicians that we may have that cooperation during the time to come when health conditions are going to play a large part in producing food for our fighting forces.

NATIONAL YOUTH ADMINISTRATION

The following copy of letter from Dr. John E. Bryan, State Youth Administrator, indicates that the plan recommended in memorandum of the State Health Officer last year has been in effect:

"This will acknowledge receipt of and thank you for your inquiry relative to present status of the health program of the National Youth Administration in Alabama. Major emphasis of the program and plan of operation is outlined in your memorandum; however, due to limitation of funds, this opportunity cannot be offered every youth. The examination is required of all youths assigned to resident projects and all food handlers. In so far as funds permit, youths employed on defense projects and youths whose appearance indicates the need of an examination prior to employment are referred for a physical examination.

"The plan for payment for work performed by physicians is unchanged. Fewer physicians are employed because of the greatly reduced number of examinations; however, the number of doctors employed on a full-time and part-time basis at a monthly salary has increased.

"You will be interested in knowing that as of March 1, 1942, 15,239 youths have had the complete National Youth Administration examination. Of this number, 4,552 were white male, 2,777 were Negro male, 6,151 were white female, and 1,759 were Negro female.

May I take this opportunity to express my appreciation to you and your staff for the splendid cooperation given us at both the state and county levels, and to you personally for your guidance and interest?"

There were four nurses employed by the National Youth Administration with one based at each of the NYA area offices in Birmingham, Huntsville, Mobile and Montgomery. A state health administrator was employed to direct activities in health and medical care. Three physicians were employed at a monthly salary. One of these served full-time and two served part-time. There were 24 physicians employed on a per diem basis.

WORK PROJECTS ADMINISTRATION STATE-WIDE HEALTH EDUCATION PROJECT

Modern tools for health education—tools at least as modern and varied as the tools used by commercial interests in the far-flung modern program of mass advertising to sell products far less valuable than health—must be provided by every progressive community and state in this "Period of Health Education" in the history of American public health. To provide these tools in Alabama, three agencies, the Alabama State Department of Health, the Jefferson County Board of Health through its Bureau of Health Education, and the Alabama Tuberculosis Association have jointly sponsored a public health

education program which has enlisted the aid of many agencies both official and volunteer; national, state and local.

It is believed that the program so developed represents one of the most extensive applications of health education techniques to a substantial population group in current American public health practice. Because there is no single avenue of approach to public opinion, every care has been taken not to overemphasize the use of any one medium. Rather, all the channels of communication have been utilized within the ability of the program to reach. The printed word—made typographically as attractive as possible and broadcast in substantial volume; the spoken word—spoken with all the loudness at the command of modern voices such as radio, disc recording, the sound film; graphic aids such as puppet shows, exhibits, moving pictures and photographs; all have been employed.

Two fundamental messages have been delivered by the machinery thus created; first, the importance of medical science with emphasis upon the physician as the person solely responsible for the health and physical well-being of the individual; and second, the modern concept of preventive medicine in both its public and personal applications.

One of the unique features of the public health education program in Alabama has been its utilization of the resources of the federal emergency program to provide facilities usually far beyond those at the disposal of the public health field. This participation of the federal government through a health education project of the Work Projects Administration especially has made possible health education activities both more extensive and more intensive by far than would otherwise have been possible.

An example of this is the use which has been made of the radio in health education. With the aid of writers, actors, musicians, sound effect technicians, transcription engineers and other personnel provided by the Work Projects Administration, as many as thirteen fifteen-minute radio programs have been given each week for long periods. Many of these have been routinely recorded and used on a variety of Alabama stations. These radio programs have employed practically all existing types of radio presentation, including health talks, dramatic programs, interviews, health news broadcasts, musical programs with health messages taking the place of the usual commercial, etc.

Using the same personnel and equipment, recordings have been made of lectures, descriptive materials to accompany lantern slide sets, and similar programs for use extensively on portable reproducing equipment. It should be emphasized that these extensive radio programs have all been supervised by competent, technically qualified personnel in the various artistic and engineering specialties involved, all of which has been provided without cost to the state public health facilities by the Work Projects Administration.

In the rural areas of Alabama, an especially effective activity has been a health puppet show consisting of a portable theatre, powerful public address amplifying equipment and, for night

showing, sound moving picture projectors and screens. It has been usual to precede the appearance of this unit in a rural community by an extensive advertising campaign, following which the equipment has been set up at some suitable location, such as a courthouse lawn on a Saturday afternoon and evening, for continuous showing of dramatized health puppet shows and moving pictures. Literally tens of thousands of Alabama citizens have been reached in this manner.

Of fundamental importance still in any program which seeks to reach and influence public opinion, despite the development of radio, is the printed word. The pamphleteer has repeatedly profoundly altered the course of human events.

With the aid of the State Tuberculosis Association which has provided the necessary equipment, and through the assistance of the National Youth Administration, an effort has been made to employ printed matter in the service of public health more widely than ever before.

Through these facilities a printing plant, designed to provide work experience in the printing trades for young people, has been organized. In this plant many health leaflets, annual reports of health centers and clinics and such devices as a health almanac and similar health material have been printed in large editions, usually on cheap newsprint. In this way at a nominal cost, tremendous circulation has been achieved.

Of special interest, perhaps, is the Alabama Health Almanac. A survey of a thousand rural families, made by the University of Alabama which inquired into all phases of rural life in the South, disclosed that next to the Bible the most common piece of literature in the Southern rural home was an almanac. These almanacs, of course, were, in the main, patent medicine publications designed to further the sale of nostrums of little or no real value.

With this background, the project prepared in a large edition an Alabama Health Almanac designed to provide authentic health information; emphasizing the role of the physician and the importance of medical science in the treatment of disease, urging that disease be treated with science rather than superstition. To increase its attractiveness, the local content was extensive, utilizing Alabama historical facts in its chronology, and developing in other ways a local flavor. These almanacs were distributed widely among the rural population in practically every Alabama county. It is believed that this represents a practical example of the basic aim of this entire public health education program; namely, the utilization of the techniques of commercial promotion and advertising for the furtherance of public health.

Under the stimulus of the great World Fairs recently held, which have very greatly developed exhibit techniques in America, exhibit construction utilizing the facilities of the Work Projects Administration has had a large part in the health education program in Alabama. During the past three years, for example, attendance at the health exhibits at the Alabama State Fair has exceeded 100,000 persons per year. Every effort has been made to make the exhibits attractive, attention

compelling, simple; all in accordance with modern concepts of the nature of exhibits and exhibit construction. One subject has been emphasized each year, as follows: (1) bacteriology, (2) maternal and child health protection and (3) public health and industrial Alabama.

In addition to these exhibits, a large traveling exhibit transported in a trailer and constructed for display along a street curb line or across a courthouse lawn was widely circulated throughout Alabama. This exhibit dealt with the modern knowledge of the cause, prevention and treatment of tuberculosis.

Increasing use of graphic materials, so pointedly emphasized by the development in recent years of the "picture magazines," has not been lost sight of in this public health education program. It is recognized that the modern world is a world of pictures. Fortunately, the program has been able to organize, with the assistance of the National Youth Administration, a photographic shop intended to provide work experience in photography for young people. Under a trained photographer this shop has produced many outstanding health pictures, which have been utilized in a variety of ways: in exhibits, printed matter, newspaper stories, window displays, etc. It is believed that these photographs are of a sufficiently high quality to compete with advertising photography in general.

It is emphasized that health education of the whole people must entail the participation of all the people. As an example of this, the program has been very successful in developing radio programs using the very considerable musical and dramatic talent available among Alabama Negroes to support health programs in which prominent Negro physicians and laymen participate. Also the interest of young people has been stimulated through the participation of the National Youth Administration and other agencies dealing with youth, in such activities as the making of short health moving picture subjects.

It should be emphasized that this portfolio is intended not to be a complete description of the health education program in Alabama but to illustrate high lights merely, providing a pictorial insight into the more unusual phases of this activity.

It is our belief that to be effective health education must actually reach the masses of the people. During the last twelve months, for example, more than two thousand showings of health moving pictures have been given, reaching an audience in excess of three hundred thousand people; an appreciable percentage of our total population. The aim of this mass campaign has been to bring medical science and public health to the attention of all the people of this state, industrial as well as rural, including those now engaged under the symbol of Vulcan, god of the forge, emblematic of industrial Alabama, in providing the basic armament in iron and steel for the defense of our World. In Alabama as in few other states, "Public health is the foundation stone upon which rests the strength of a nation."

THE PRESIDENT'S MESSAGE

In the opening remarks of his message, the President clearly points out his duties by quoting extracts from Article IX of the Constitution of the Association. He then proceeds to unfold to the membership how these duties have been ably performed giving due credit to those persons who have assisted him for their part in making his administration a success.

Commendation is accorded the Woman's Auxiliary for the splendid work done during the year under the leadership of Mrs. J. R. Horn, Jr., of Bessemer. Particular attention is called to the activities of the Anniston, Bessemer, Birmingham and Mobile Units in collecting secondhand instruments, medical supplies and physicians' samples of medicines for use in the medical relief of the United Nations, providing two scholarships and conducting a campaign for improving the health of school children.

The Board is in hearty accord with the President in his approbation of the Journal. His desire "to see a return to the binding of the Transactions in permanent form" warrants some comment. It will be recalled that when we first began the publication of the Journal provision was made for members to procure bound volumes for \$1.50 each. The publishers retained two hundred copies of each month's run of the Journal and were prepared to bind them. However, only about six requests were made for these bound copies. The cost to the Association to institute this practice would be prohibitive. Arrangements are now in effect with the Brown Printing Company, Montgomery, so that any member, if he will save his twelve monthly issues of the Journal and send them to the Secretary of the Association, they will be bound at a cost of \$1.50 per volume and returned to him.

The Board agrees with the President in his recommendation that, since Alabama heads the list of states alphabetically, there is an excellent opportunity for favorable publicity in the Medical News Section of the Journal of the American Medical Association. The Secretary of the State Medical Association will gladly send all news items and publicity to the Journal of the American Medical Association for publication if he is supplied with the information while it has news value. This recommendation of the President deserves consideration of all members, particularly secretaries of county medical societies.

The comments of the President regarding the sorrow caused by the untimely death of Dr. J. N. Baker are appropriate. We have received a distressful shock and the medical profession will continue to experience the great loss for a long time, not only in the field of public health but also in the general medical practice. Appropriate encomium is presented elsewhere in the Transactions of the Association.

The Board shares with our President his gratification of the progress that is being made in the diagnosis and treatment of disease. Serving in its capacity as a State Board of Medical Examiners, it has an opportunity to observe the beneficial results of the high educational requirements which the profession has demanded. We

are aware that the war situation will inevitably interfere with medical practice and particularly so in rendering rural medical service. Every physician must inure himself for the tasks ahead and the demands that will continue to be made in industry, general practice and the armed forces upon his time and talents.

The President directs attention to the fact that only a small percentage of the hospitals in Alabama with less than 100 beds measured up to required standards when the recent survey of hospitals was made by the American Medical Association and the American College of Surgeons. It is believed that many of the apparent defects observed during this survey can be readily corrected by the physicians associated with these smaller hospitals. The comments of the President on this subject are timely and appropriate and the Board urges that efforts be made to increase the ratings of these smaller hospitals.

It is well that the President has again called to the attention of the Association the need for a four-year medical school. The Board is in hearty accord with the views expressed concerning the efforts for expansion in the curriculum of the Medical School of the University of Alabama. Consideration will be given to the possibility of pressing the question during the next year and procedures for getting results.

The Board is in sympathy with the Alabama Survey of Health and Hospital Conditions now being conducted by Colonel Hopson Owen Murfee, Executive Secretary of the Alabama Citizens' Committee. It concurs with the recommendation of the President that a committee be appointed to cooperate with the Alabama Citizens' Committee in conducting this survey. It is suggested that a committee of three will be sufficient to serve the purpose of this recommendation, and that such a committee be appointed by the incoming President.

The Association gave approval to the Board's comments on the President's message.

REPORTS OF THE VICE-PRESIDENTS

Planned meetings were held in each of the four divisions. There were three in the Northwestern, two each in the Southwestern and Northeastern, and one in the Southeastern. Excellent, interesting programs were arranged by the Vice-Presidents but poor attendance was experienced at most meetings.

Special consideration was given by each of the Vice-Presidents to the contracts with the Farm Security Administration. The consensus of opinion is that these contracts do not allow sufficient funds to pay for adequate medical and hospital services. One vice-president has aptly written: "There are many faults in a medical care plan of this character; excessive demand for services and drugs by clients, padding of family lists with relatives and in-laws, a lack of a clear understanding by clients, doctors and Farm Security Administration personnel of what the plan provides in medical care, the need for correction and treatment of chronic defects and disorders, and the unusually large clinic attendance with associated inability to pay for medicine. How-

ever, it is so far the best method to handle this class of patients we have been able to work out. With all its evils and limitations, we believe the medical profession in our immediate area find this type of medical care better than the old way of caring for indigents. Two vice-presidents indicate that, on the whole, the Farm Security Administration plan of payment for medical and hospital services is unsatisfactory.

In the light of these conflicting views, attention is directed to the provision in the amendment to the ordinance on contract practice to the effect that each medical society is privileged to enter into agreement with a governmental agency in accordance with local circumstances. The Board, in the hope of improving the relations between medical societies and the Farm Security Administration units relative to medical services for its clients, has instructed the Chairman to appoint a committee of five to meet with representatives of the Farm Security Administration in August or September to try to work out a more satisfactory plan to be presented for consideration.

One vice-president suggests that a new Red Book be sent to each member. Compliance with this recommendation was authorized in 1939 but the cost of publication has made it prohibitive. The Board believes that the same results will be accomplished if the constitution and by-laws, as amended, are published in the Journal and recommends that this be done.

The reports of the Vice-Presidents indicate that they have been active throughout the year. The Board commends each of them and urges practicing physicians to show more interest in the activities of their local societies, as well as in the four divisions of the Association.

The reports were endorsed by the Association.

REPORT OF THE SECRETARY-TREASURER

It is noted from the report of this officer that there are ten less physicians on the rolls of the Association now than a year ago, to be attributed, in all probability, to change of residence to other states. In these trying times, when the nation is calling so many to the colors, it is to be regretted that many sections of our state find themselves in need of physicians.

The Board expresses the grief of the Association caused by the death of forty-seven physicians in the state during the year. It particularly feels the loss of Dr. J. N. Baker, our esteemed late State Health Officer.

The Board commends the Secretary-Treasurer for the accurate records so neatly kept and approves the financial accounts of the Association for period January 1-December 31, 1941, as audited by Crane, Harper and Wilson of Montgomery.

The report was approved.

COMMITTEE OF PUBLICATION

This committee continues to render valuable service to the profession through publication of the Journal and distribution to all members of the transactions of the Association. On the pages of the Journal records and proceedings of the last

annual meeting were accurately recorded, papers read on the program were published, current activities of the State Health Department were reported, and subjects of interest were ably discussed on the editorial pages.

Upon recommendation of Dr. Fred W. Wilkerson, the Board voted to name Dr. Douglas L. Cannon Editor-in-Chief of the Journal, and appointed Dr. Wilkerson Associate Editor to serve with Dr. M. Y. Dabney and Dr. W. D. Partlow, representing the Board.

The Board eulogizes the editorial staff of the Journal and recommends continued publication as a record of current events and a reference to Alabama medical and health activities.

REPORTS OF STANDING COMMITTEES

PUBLIC RELATIONS

This committee directed attention to the responsibilities of ethical physicians in providing medical care for the armed forces and the civilian population. Emphasis was placed upon the importance of measuring up to the obligations we have taken through our spokesmen in the American Medical Association.

We were given timely warning of the likelihood of attempted federal legislation to correct any deficiency that might occur in medical care for civilians during this crisis. Caution was given that we take care to prevent emigre' physicians from being legally permitted to assume control of the practices of physicians who are being called from their communities to serve with the armed forces.

The Board concurs with the views expressed by the committee and recommends approval of its report.

MENTAL HYGIENE

Cooperation of the physicians of Alabama has been sought by this committee to hasten psychiatric progress. An orientation course on psychiatry and preclinical psychiatry has been added to the curriculum of the Medical School of the University of Alabama in the sophomore year. This course should enable the medical students to gain valuable knowledge of our psychiatric problems and interest them in the possibilities of psychiatry.

The committee has continued its lay education activities regarding the needs, the advantages and the possibilities of psychiatry. Speakers have been supplied to parent-teacher association meetings, civic clubs and other lay organizations to explain the activities in which the committee is interested. Individual members have kept in close touch with the welfare and mental hygiene associations of the state, rendering advisory services wherever and whenever desired. It is believed that these public relations will accomplish great good.

The Board commends the committee for the splendid services rendered during the year and expresses appreciation to the personnel of Bryce Hospital for the continued demonstration clinics for students in the institutions of higher learning.

MATERNAL AND INFANT WELFARE

This committee has been active primarily in cooperation with existing agencies promoting improvement in maternal welfare. It is pointed out that under the leadership of the personnel of the State Health Department the quality of services rendered at maternal clinics has improved. Attention is directed to the observation that this improved prenatal supervision is creating a wholesome influence upon a large non-clinic group who engage the physician earlier in pregnancy than heretofore and procure better prenatal care.

It is interesting to note that the maternal death rate for prenatal clinic patients is only 27.3 per 10,000 live births as compared to the rate of 45.1 for the state as a whole. The most striking results were shown in the maternal mortality rate for Negroes where there were 82.8 deaths per 10,000 live births among non-clinic Negro mothers compared to 32.4 for those of the same race who attended the prenatal clinics.

The encouraging results accomplished in the stillbirth rates are comparable to those for maternal mortality and show a rate of 36.6 for the clinic group compared to 59.0 for the non-clinic group.

The committee warns of the hazards of cesarean section in most of our hospitals, pointing out that there was one death in each 20 sections performed. Conservatism is recommended as the solution to this problem.

The Board approves the report of the committee and urges each member of the Association to study it with the hope of further lowering the maternal mortality in Alabama.

CANCER CONTROL

The educational campaign of the committee has gone forward apace with the times and needs. Members have cooperated and worked closely with the Alabama Women's Field Army for the control of cancer. Lectures have been made to medical groups, civic organizations and women's clubs; articles have been published in the Journal and newspapers; the radio has been used and the motion picture "Choose to Live" has been shown in various parts of the state. The State Health Department has cooperated and has allocated the sum of \$500 to be used in the promotion of the educational program.

The committee recommends an act of the Legislature to secure an annual appropriation for carrying out the cancer control program.

The Board concurs with the committee in its recommendation for seeking funds to provide transportation and treatment for patients at cancer clinics and to establish additional cancer treatment facilities to be conducted under the auspices of the organized medical profession, and believes that the time is opportune for action. It is, therefore, urged that the committee be authorized to sponsor an act for the control of cancer to be presented to the next Legislature.

The members of the committee deserve the commendation of the entire profession for their efforts in the prevention of cancer.

PREVENTION OF BLINDNESS AND DEAFNESS

The program of this committee has been largely educational. The state and county health departments have cooperated extensively in the campaign to prevent gonorrheal ophthalmia through educational activities and supplying 65,000 ampoules of silver nitrate to be used by physicians and midwives in the eyes of the newborn.

Appreciable efforts have been made in extending aid to the blind, but the committee directs attention to the fact that this is "comparable to locking the stable after the horse has been stolen."

The Board concurs with the committee in its recommendation for continued and added efforts looking to the prevention of blindness.

POSTGRADUATE STUDY

The Committee on Postgraduate Study has continued to function efficiently. The courses in gynecology and non-operative surgery begun last year were continued in sixteen centers with 211 physicians attending. The present plan of completing the course during a period of three consecutive months seems to be more convenient for attending physicians than the plan formerly used when two or three centers were covered in a month.

The Board suggests that the committee give consideration to pediatrics, obstetrics, or medicine for the next series of lectures.

The committee is commended for its active interest in bringing the more recent scientific procedures to the busy doctors of this state, and the Board recommends the approval of its comprehensive report.

ACCIDENTS AND INDUSTRIAL HYGIENE

The report of the Committee on Accidents and Industrial Hygiene indicates that much has been accomplished in this field through education and publicity regarding first aid to the injured. Considerable impetus was given the program through first aid classes conducted under the auspices of the American Red Cross in conjunction with civilian defense activities.

The Board hopes that the committee may be able to continue its splendid educational program, and commends its efforts to the profession as a whole.

ARCHIVES AND MEDICAL HISTORY

The report of this committee reminds us of the publication of additional chapters of the "Biographies of Alabamians who have been Presidents of the American Medical Association" by Professor Emmett C. Carmichael, of the Department of Physiologic Chemistry at the University of Alabama. It also calls attention to the project, "A History of Public Health in Jefferson County, Alabama," being conducted by the Writers' Division of the Work Projects Administration in Birmingham. Particular mention is made of "a storehouse of information and data" contained in a twelve-volume diary of the late Dr. Thomas D. Parke, of Birmingham, who founded the Jefferson County Health Department, and was one of the founders of the Children's Hospital in Birmingham.

The committee recommends the appointment of two additional members to assist in arranging for the writing of a history of medicine in Alabama. The Board recognizes the vast amount of work required to prepare an accurate and complete history of medicine in Alabama. In view of this fact, and because provision is made for only three members on other standing committees of the Association, the recommendation of this committee is approved and it is suggested that the incoming President increase its membership to five.

It has been brought to the attention of the Board by the committee that if the Association would make a small grant to the committee it could get a history of medicine in Alabama written by the Writers' Division of the Work Projects Administration infinitely more economically now than could ever be done again. Because it would be of vast importance and untold interest to the profession to have this done, the Board recommends that an amount, not to exceed \$500, be appropriated from the funds of the Association to assist in having this history written in this manner.

The Association concurred in the recommendations of the Board.

PHYSICIAN-DRUGGIST RELATIONSHIPS

The Chairman of the Committee on Physician-Druggist Relationships made an oral report in which he urged that some other physician be appointed as chairman of the committee. The Board recognizes the importance of the activities to be carried on by this committee and expresses regret that the Chairman feels he cannot longer serve in this capacity. It is recommended that the incoming president appoint another physician as chairman and some one to take the place of Dr. N. G. Clark (deceased) on the committee.

The several committee reports were adopted by the Association.

AMENDMENTS TO THE CONSTITUTION

1. At the last annual meeting, the Board submitted a suggested amendment to Section 7 of Article XV of the Constitution in order to bring it in line with Article IV, as amended at the 1941 meeting. The amended Section 7 of Article XV is as follows:

Each county society shall transmit annually as dues to the Association for each of its members, exclusive of counsellors, the amount fixed by ordinance of this Association relating to membership dues; also, a report, to be prepared by its secretary covering the calendar year preceding the annual meeting of the Association at which it is rendered.

Said report shall contain:

- (1) A roll of officers;
- (2) A roll of members, giving names in full, together with colleges, dates of graduation, and postoffices;
- (3) A roll of the physicians residing in the county who are not members of the society, giving names in full, together with colleges, dates of graduation, and postoffices;

(4) The number of meetings held and the number attending each meeting;

(5) A list of physicians who have moved into the county, stating from whence, and where they have located;

(6) A list of physicians who have moved out of the county, and to what places, if known;

(7) A list of physicians who have died, of what disease, and at what ages;

(8) All other matters of special interest.

The amendment having lain over for one year, the Board now recommends its adoption.

On roll call, the amendment was unanimously adopted by the Association.

2. The following resolution was introduced by Dr. K. A. Mayer at the last annual meeting of the Association, but since it involved an amendment to the Constitution it was necessary that it lie over for one year:

Whereas, The Constitution of The Medical Association of the State of Alabama specifically prohibits the use of any of the funds for festivals or entertainment of its members in any manner, therefore be it

Resolved, That the Constitution be amended to allow the use of a portion of the revenues for the entertainment of the members of the Association at its annual meeting.

Section 4 of Article 14 of the Constitution of the Association reads as follows:

The Association shall not appropriate any of its funds for the purpose of providing festivals, or entertainment at its annual sessions, nor for any purpose other than such as may tend to perpetuate and proclaim its history, to uphold its organization, and to advance its interests, and likewise those of the cause of scientific and practical medicine."

In giving consideration to this resolution it is to be remembered that the Association meets in Birmingham, Mobile and Montgomery only and that the societies of the counties in which these centers of population are located serve as hosts to the Association. As hosts, it is the privilege of the societies concerned to arrange for commercial exhibits, to charge therefor, and to decide in what manner the revenues from the exhibits shall be used. For the reason that the exhibits are procurable only because the Association is in session, each of the three societies has uniformly felt that the monies from the exhibits should be used, in part, for the entertainment of the Association. Aside from this, the Board is of the opinion that those who wrote the Constitution were wise in writing into it a prohibition of the use of the Association's funds for entertainment purposes. The Board doubts that this inhibition should now be revoked, and, therefore, recommends that the resolution be not adopted.

Dr. Mayer, author of the resolution, addressing the Association, asked permission to withdraw it. Permission was granted, and therefore Section 4 of Article XIV of the Constitution was not amended.

ELECTION OF ACTING STATE HEALTH OFFICER

On November 9, 1941, owing to the lamentable death of Dr. J. N. Baker, Alabama's distinguished State Health Officer for more than eleven years, it became necessary for the State Committee of Public Health to select his successor. At a special meeting of the Committee November 10, 1941 the opinion was expressed that, because of the terrible tragedy which had come to the Committee so suddenly in the death of Dr. Baker, it had not had time to think the matter through or arrive at a selection. Whereupon Dr. B. F. Austin was elected to serve temporarily as Acting State Health Officer until such time as a permanent State Health Officer might be nominated and confirmed by The Medical Association of the State of Alabama.

ELECTION OF STATE HEALTH OFFICER

Section 6 of Article XIII of the Constitution of The Medical Association of the State of Alabama reads as follows:

"The board shall elect from the College of Counsellors, by not less than a majority vote of its members, an executive officer to be known as the State Health Officer, and shall submit the name of the officer so elected to the Association (the State Board of Health) in annual session for confirmation."

In compliance with this constitutional provision, the Board has pleasure in reporting to this Association that it has unanimously elected Dr. B. F. Austin, of Montgomery, as State Health Officer for a period of five years, and now submits this action by the Board to this Association for confirmation.

The election was confirmed by the Association.

SECRETARY TO THE STATE HEALTH OFFICER

In recognition of long, faithful, loyal and efficient service, the Board unanimously recommended that Miss Bessie A. Tucker be officially designated as Secretary to the State Health Officer, and directed that her name appear, with this title, on the stationery of the State Department of Public Health.

RESOLUTION

INTRODUCED BY DR. PARTLOW

Whereas, The record reveals that this Association by its action in 1852 was materially effective in its cooperation with the movement which resulted in the establishment of a state hospital for the mentally ill in Alabama, and

Whereas, Now The Alabama Citizens' Committee, composed of a voluntary group of most influential Alabama citizens serving without remuneration, is rendering very distinct service in the interest of the state hospitals and the state school for mental deficient, public health, and in cooperation with the movement to establish and maintain a four-year medical school in Alabama, and

Whereas, This Committee of distinguished private citizens is now engaged in conducting an Alabama Health and Hospital Survey as a basis for the further development of the Alabama state

institutions for the mentally ill and the mentally deficient and for establishing an Alabama medical center, including a four-year school of medicine, and the necessary supporting hospitals designed for teaching research and health service, and

Whereas, The Alabama Citizens' Committee has requested the cooperation of The Medical Association of the State of Alabama in these humane and patriotic endeavors, Therefore be it

Resolved, That a research and service committee of The Medical Association of the State of Alabama composed of three members of the Association be and is hereby constituted to be appointed by the President of the Association for the purpose of assisting the Alabama Citizens' Committee.

The Board recommends the adoption of this resolution.

The resolution was adopted.

Part I of the Board's report was adopted.

PART II

REPORT OF THE BOARD OF CENSORS AS A BOARD OF MEDICAL EXAMINERS

In this field of its activities the Board submits the following:

Certificates of qualification granted	85
Number passing examination June 17-19, 1941	25
(a) Certificates granted	4
(b) To be granted after internship	21
(c) Granted after internship July 1, 1941	21
(d) Received through reciprocity	55
(e) Through Nat. Bd. of Medical Examiners	5
(f) Certificates of qualification revoked	2
(g) Physicians denied narcotic privilege	2
(h) Narcotic privilege restored	3
(i) Chiropody renewal certificates issued	35

CERTIFICATES OF QUALIFICATION GRANTED
EXAMINATION APPLICANTS

Gomez, Clifton Jules Schilleci, Vincent J.
Lane, Thomas Hamilton Yeager, Otis Wayne

CERTIFICATES ISSUED APPLICANTS COMPLETING
INTERNESHIPS JULY 1, 1941

Brannon, William T.	McCafferty, Emit L., Jr.
Brantley, James A.	McCarn, Oscar C., Jr.
Donald, James G.	Melton, Thomas A.
Douglas, Gilbert F., Jr.	Meriwether, William G.
Eskridge, Marshall	Moody, Frank Sims
Glasgow, Richard D.	Moody, William E.
Herrod, Henry G., Jr.	Perry, Joseph W.
Hodo, Henry G., Jr.	Price, Benjamin J.
Hutchins, Paul F.	Pve. Alice Hill (Mrs.)
Johnson, George E.	Weatherly, George I., Jr.
	Weldon, Howard S.

CERTIFICATES TO BE GRANTED AFTER ONE YEAR
OF SATISFACTORY INTERNESHIP

Anderson, Martin N.	Gilliland, Martha J.
Barron, James M.	Grubbs, Roy James
Belk, James C.	Holloway, Hosah S.
Bilbro, Griff W.	Kimbrough, B. B., Jr.
Bolton, Juanita L.	Lavender, Claude W.
Cale, Edward E., Jr.	Matthews, Jane M.
Camp, William A.	McGehee, Paul D.

Moore, Joseph Watts Perry, George T.
Newburn, George W., Jr. Sanders, Elbert H.
Patton, Thomas H., Jr. Webster, Harry N., Jr.
Wood, William Gross

RECIPROCITY APPLICANTS RECEIVED APRIL 1941-
APRIL 1942

Adams, George W.—Mo.	March 27, '42
Benson, Ralph C.—Md.	Aug. 8, '41
Brackin, Odie Dee—Ark.	June 11, '41
Bradford, Cecil R.—Tenn.	April 8, '41
Burwell, Edmund S.—Ga.	June 11, '41
Burwell, Philip Kent—La.	Oct. 4, '41
Callison, Caroline H.—S. C.	March 2, '42
Cashman, George A.—N. Y.	Sept. 25, '41
Cheney, Henry W.—Ill.	Feb. 9, '42
Chipp, Henry Davis—Ky.	March 2, '42
Clapp, Henry W.—Mich.	Oct. 10, '41
Cornwell, Robert A.—Penn.	Dec. 8, '41
Cothran, Robert M.—Md.	Aug. 29, '41
Crowell, Robert W.—S. C.	May 19, '41
Daniel, William A., Jr.—N. B. E.	May 21, '41
Deer, Walter H.—Penn.	Feb. 19, '42
Deibert, Kirk R.—N. J.	May 16, '41
Donnelly, Madelene M.—Iowa	March 18, '42
DuPuy, Alton J.—Texas	May 12, '41
Eddy, Corinne S.—N. Y.	May 19, '41
Floyd, Henry T.—Md.	Nov. 6, '41
Folkers, Leonard M.—Iowa	May 19, '41
Fonde, William G.—La.	July 17, '41
Gehbauer, Louis J., Jr.—La.	March 16, '42
Gessler, Ivan W.—Tenn.	March 9, '42
Gross, Esther M. S.—Ohio	Oct. 6, '41
Gross, George D.—N. B. E.	Sept. 27, '41
Higgins, Harold G.—N. Y.	Aug. 11, '41
James, Robert M.—Ky.	Aug. 29, '41
Johantgen, James F.—Mich.	May 16, '41
Johnson, Harold N.—N. B. E.	Feb. 9, '42
Kraemer, Manfred—N. Y.	June 11, '41
LaCour, Bennett J., Jr.—La.	June 18, '41
Lowry, Harvey M.—Tenn.	Feb. 2, '42
Macrae, Donald H.—Ky.	Aug. 8, '41
Marks, Robert H.—N. Y.	May 1, '41
McCoy, Walter C.—La.	Oct. 17, '41
Moody, Irving W.—Texas	Oct. 9, '41
Motyka, Stanley J.—Ark.	Oct. 6, '41
Parker, Harry J.—Ill.	Nov. 12, '41
Parker, Leslie L.—La.	Dec. 1, '41
Pitt, Charles K.—La.	Dec. 4, '41
Place, Edwin H.—Mich.	March 23, '42
Quigley, Joseph A.—N. Y.	Jan. 19, '42
Roberts, Curtis M.—Miss.	Sept. 29, '41
Shearer, Francis E.—Ky.	July 7, '41
Sherman, Morris—La.	Oct. 24, '41
Shipp, Jack S.—La.	June 6, '41
Shirey, John L.—N. C.	June 11, '41
Stayer, Glenn E.—N. B. E.	June 2, '41
Stone, John J.—Ga.	July 21, '41
Stuteville, Ethel—Ind.	June 11, '41
Sweeney, Donald B.—Iowa	Sept. 22, '41
Turk, Aquilla S.—Ga.	June 11, '41
Walker, James E.—Ky.	Aug. 11, '41
Wallace, Samuel H., Jr.—Mo.	Nov. 21, '41
Walton, Mary—N. B. E.	April 18, '41
Wetherhold, John M.—Penn.	April 14, '41
Wittmeier, James L.—La.	Aug. 18, '41
Young, Allen C.—D. C.	July 21, '41

Part II of the Board's report was approved.

PART III

REPORT OF THE BOARD OF CENSORS AS A STATE COMMITTEE OF PUBLIC HEALTH

B. F. Austin, M. D.

Acting State Health Officer

ADMINISTRATION

FOREWORD

The health and welfare of the armed forces of America are our chief concern and will continue to have first place until victory crowns the efforts of the United Nations. We cannot and must not lose sight of the fact, however, that the civilian population is the very source of the military. It is, therefore, imperative that we maintain as healthy a civilian population as possible. All of us, particularly those who are doing public health work, realize now, more than ever before, that it is a matter of vital importance for us to prevent disease. The efficiency of our armed forces, of our industrial forces, of our agricultural forces, and of our civilian forces depend upon good health. We continue our efforts to that end, bearing in mind that the war will vitally affect all of us. There have necessarily been changes of our principles and practices in conducting public health programs and there will be others, as well as sacrifices of material things. Unless we experience violence, sabotage, or serious shortages in supplies of foods and drugs, the immediate health problems which must inevitably accompany an all-out war program are problems relating to mass population movements, congestion, and the speed-up in industry. We have experienced comparatively large migrations of workers into small defense communities. These may bring with them a variety of pathogenic organisms to which they themselves are immune but to which the original residents of the communities have not had a chance to build up any resistance.

Social conditions during war-time also give rise to health problems associated with overcrowding, poor housing, trailer camp communities, stream pollution from industrial wastes, inadequate sewage disposal, unsafe drinking water supplies, unsatisfactory milk supplies, hurried meals, improper nutrition, fatigue, nerve strain, prostitution and so on. In addition, disasters and emergencies arising through direct violence, such as floods, storms or fire, bombing or sabotage, may lead to unexpected health hazards.

Services of practicing physicians, dentists, veterinarians, nurses and public health personnel were utilized in increasing numbers in the defense program for a variety of activities. The examination of selectees for the armed forces was continued throughout the year. The serologic tests of the blood taken from selectees made at the laboratories of the State Health Department added tremendously to the laboratory services rendered.

The State Health Officer continued to serve as State Chairman of the Committee on Medical Preparedness as recorded in the annual report April 17, 1941. The name of this committee was

changed in November 1941 to Procurement and Assignment Service and the Acting State Health Officer was named Chairman with the State Board of Censors serving as the committee. The chief duty of the committee is to advise the Executive Officer of the National Procurement and Assignment Service regarding the availability for active military duty, or transfer to another community, of any physician under consideration for call to active service. The four district vice-presidents of the Association, with the assistance of local physicians, have been requested to prepare lists of physicians available for active duty with the armed forces or transfer to other civilian communities in need of medical services or considered essential in the local community.

The State Health Officer was appointed by Governor Dixon as a member of the State Defense Council January 3, 1941 to represent the State Board of Health. The Acting State Health Officer was appointed to fill the position on November 17, 1941. Under this jurisdiction has developed the emergency medical services, volunteer nurses aide program, home nursing program, and first aid and emergency medical field units.

Public health workers in the state and county health departments have cooperated with local Red Cross chapters by conducting classes in home nursing and first aid. They have cooperated with local offices of civilian defense by assisting in organizing emergency medical services and setting up emergency medical field units. Many of them are serving with the state and local defense councils.

The Acting State Health Officer was appointed on December 16, 1941 by Secretary Henry Morgenthau, Jr., of the U. S. Treasury Department, as a member of the State Committee on Defense Savings. It is encouraging to report that a vast majority of the health workers in Alabama are purchasing defense savings bonds and stamps regularly and systematically. No pressure has been brought to bear upon them to do so but many health workers have authorized payroll deductions for the purchase of these defense bonds and stamps.

WORK PROJECTS ADMINISTRATION

Valuable public health services were rendered by Work Projects Administration workers through projects sponsored by the state and county health departments. These services included vital statistics, public health nursing, construction of sanitary pit privies, malaria control work, typhus fever control work, health education through construction of visual education material, distribution of reading material, and conducting lectures and motion pictures.

NATIONAL YOUTH ADMINISTRATION

The health program of the National Youth Administration was continued during the year. Some of the youths employed by NYA have been assigned for duty with health departments to assist at clinics and do clerical work. Others have been assigned to assist in hospitals, and work at resident projects in work shops and sewing rooms. Complete medical examinations were made by Alabama physicians for 15,239 young

people employed by the Administration. There were three physicians employed at a monthly salary. One of these served full-time and the other two part-time. There were twenty-four physicians employed on a per diem basis.

FARM SECURITY ADMINISTRATION

The health activities of the Farm Security Administration were continued by public health nurses who worked in cooperation with county health departments, and through the construction of standard pit privies and protection of private water supplies. A physician employed by FSA on a full-time basis has general charge of the health and medical services and has several states under his jurisdiction. Local physicians are employed on a visit basis to render medical services to Administration clients upon agreement entered into with each participating county medical society. Provision is also made for hospital service and drugs.

TENNESSEE VALLEY AUTHORITY

The health program of the Tennessee Valley Authority continues as heretofore with public health activities being carried on through the services of physicians, nurses and sanitarians, who work in close cooperation with personnel of the state and county health departments. The health and medical services rendered to employees of the TVA are under direct supervision of personnel of that agency.

ACKNOWLEDGEMENTS

Grateful acknowledgment is made to the personnel in the governmental and private agencies who have given invaluable aid and sustenance to the program of health activities carried on in Alabama during the year. The U. S. Public Health Service has not only contributed funds for the purchase of equipment and supplies and payment of salaries of local public health workers but has loaned additional personnel and rendered inestimable advisory service. The Children's Bureau has contributed large sums for promoting maternal and child health and specially trained personnel for valuable consultative service. The Commonwealth Fund has contributed aid to the East Alabama Health District. The National Foundation for Infantile Paralysis was helpful during the 1941 epidemic of poliomyelitis by making a loan of four respirators and sending a staff of investigators to study the epidemic; and the Crippled Children's Service of the State Department of Education assisted materially in the epidemic and aftercare of the poliomyelitis patients. The Rockefeller Foundation continued the rabies study which is contributing valuable information to our knowledge of methods for control of this dread disease in human beings as well as the lower animals. The Julius Rosenwald Fund, through continuation of Negro health services, has made a definite contribution to Alabama's health. The Defense Public Works Division of the Federal Works Agency has helped by approving projects for health centers, hospital expansion, and improving water supplies and sewage disposal plants. Services of the Farm Security Administration, Work Projects Admin-

istration, National Youth Administration and Tennessee Valley Authority have been of untold value. The state dental and nursing associations have cooperated well. The State Tuberculosis Association has been quite helpful through health education activities and aid in hospitalizing cases of tuberculosis. The lay organizations, such as civic clubs, women's federated clubs, parent-teacher associations, and so on, have continued to render valuable service. The cooperation of all other state agencies, such as Departments of Public Welfare, Education and Agriculture, has been of material assistance in the promotion of public health in Alabama. Finally, and most important of all is the expression of profound gratitude to the organized medical profession and the personnel of the state and county health departments for their continued efforts to render efficient public health services to the people of Alabama.

DIVISION OF PUBLIC HEALTH EDUCATION

As in past years, the Division of Public Health Education devoted itself in 1941 to the task of keeping the people of Alabama as fully informed as possible regarding matters of health. As before, it leaned heavily upon the press and the radio, generally recognized as the most powerful and most effective agencies known for the dissemination of information. At the same time, it also enlisted a number of other agencies in its work.

In a sense of course, practically every public health worker, from the State Health Officer to the most humble member of his staff, is engaged in a form of health education, and so is the practicing physician. Whenever the State Health Officer addresses the members of a civic club, he tells them about health. Whenever a sanitary engineer seeks to convince a property owner that he should drain his land so as to eliminate a malaria menace, he is adding to this person's store of health knowledge. Whenever a physician cures a case of influenza and tells the patient and members of his family what should be done to avoid a relapse, he is making people more intelligently informed in matters of health. School teachers, physical instructors and others do the same. All, whether they realize it or not, are health educators. Thus it would be incorrect to assume that public health education can be limited to the activities of one comparatively small unit of the State Department of Health.

With other members of the staff engaged in other aspects of health education, the Division of Public Health Education is attempting to do what they do not do and seeks to reach those whom they have no means of reaching—specifically, that overwhelming majority of people who cannot be induced to attend a health lecture or demonstration or otherwise go to any trouble to become better informed in health matters. These people can be reached only by taking health messages to them. Thanks to the information-disseminating agencies that have been mentioned, it is possible to do that.

The impressive potentialities shown by one of these agencies—the radio—was seen in an article

in The New York Times several weeks ago, which pointed out that it would require thirty years of playing to packed houses for Eddie Cantor to be heard in person on the stage by as many people as hear him via the radio practically every time he goes on the air. Dr. S. Parkes Cadman said a short time before his death that he was sure that practically every one of his radio sermons was heard by more people than heard his father, also a minister, during his long career in the ministry. Both Eddie Cantor and Dr. Cadman might have added that the vast majority of those who heard them regularly over the radio would never hear them at all if they had to depend upon hearing them in person.

The number of persons reached in a broadcast over a single station is of course only a small fraction of those who listen to famous ministers and public entertainers over coast-to-coast hook-ups. However, it is worthy of note that there are no less than 83,650 families that have receiving sets within daytime listening range of Station WSFA. With an estimated average of five listeners per family the potential audience for the weekly Health is Wealth broadcasts is 418,250. Even if one heavily discounts this potential audience in order to determine the number actually listening to a given broadcast, those reached in this way would certainly represent a much larger total than could be reached in many months by means of lectures. While the cost of reaching an audience of this size by non-radio talks would be so great as to be prohibitive, it is reached via the radio at practically no cost at all.

No less impressive are the potentialities of the press as an agency in reaching the otherwise unreachable with health knowledge. Whereas it is practically impossible to induce more than a few hundred persons in even a large city to attend a health lecture, a single article published in a single newspaper—The Montgomery Advertiser, for instance—may easily be read by 100,000 or more persons. When it is remembered that State Health Department releases are made available not to a single paper but to every one of the approximately 250 dailies and weeklies in the state, it is evident that few indeed fail to see this material and that the state's population as a whole receives this information in a steady, day-after-day stream.

During the calendar year 1941 this division prepared and issued 537 daily releases, which were made available simultaneously to the two Montgomery dailies, the Associated Press, the United Press and International News Service, and 52 releases issued in mimeograph form to every newspaper (daily and weekly) outside Montgomery. The division also prepared and issued 52 State Health Chats, which were distributed by the Associated Press to A. P. newspapers throughout the state. In addition to this material, the associate in charge of this division prepared seven articles and five book reviews for The Journal of the Medical Association of the State of Alabama, seven non-radio talks, an article for The Health Officer's Digest, two articles for the monthly journal titled Alabama, and an article for The Journal of the National Medical Association.

This material, with the 52 radio talks written during the year, represents an aggregate of approximately 232,000 words, or the equivalent of three average-sized books.

If it were necessary to buy at regular advertising rates the newspaper space occupied during an average year by the public health education material issued by this division, the outlay undoubtedly would exceed by a considerable margin the total expenditures for the maintenance of this division. It is an excellent token of the wholehearted cooperation we receive from the press that the newspapers are willing to devote so much space to health matters at one of the most crucial moments of world history, when stirring international developments make such heavy demands upon the limited space they have at their disposal. Our appreciation of this valuable contribution is increased by the knowledge that, even in normal times, approximately two lines of material are crowded out for every line for which there is room. We shall continue to do our best to adapt our material to the conditions of the day, and especially to the particular needs of the Alabama press, in the hope that it will continue to print practically all the material sent from this division.

We also appreciate of course the free time of fifteen minutes given the Health is Wealth broadcasts by Station WSFA at 10:15 every Tuesday morning. The announcers and other members of the staff have been most helpful and apparently interested in our program. Sincere thanks are also extended to the State Commissioner of Agriculture and his staff for their cooperation in permitting these broadcasts to be made at the studio of the Department of Agriculture.

Every radio talk is mimeographed and about 300 copies made. These are supplied to members of the State Health Department staff, county health departments, educators, writers, public health workers in other states, magazines and a growing number of persons who have asked to receive them. Copies are also kept in our files for filling requests from those wishing material on the various diseases and other health matters for school and college papers, essays, club papers, addresses, etc.

The work of the Division of Public Health Education includes of course numerous activities in addition to those that have been mentioned. Among them are the editing of the general annual report of the State Department of Health, the handling of a growing correspondence, the furnishing of information not available in printed or mimeographed form, and requiring research, cooperation with other agencies of the state and federal governments and with other state health departments in the promotion of health information, assembling of data desired by other members of the staff, general supervision of the State Health Department Library, reading of medical journals, statistical bulletins and numerous other publications, assisting in the orientation of new State Health Department personnel, etc.

The many requests made upon this division for copies of the radio talks indicate that the booklets and other material issued by the U. S. Public Health Service, the Children's Bureau, the

Metropolitan Life Insurance Company, the John Hancock Life Insurance Company and other firms and agencies fail by a great deal to satisfy the needs of those who turn to a state health department for information, excellent though they are as a means of informing the public generally in health matters. Written for the American people as a whole, they cannot have any special appeal to Alabamians. The vital statistics figures they contain are those for the country as a whole and are of little help to persons especially interested in health conditions in this, or any other, single state. In view of this need and also in view of the fact that mimeographed radio talks cannot be circulated as widely as printed matter and that printing greatly increases the physical attractiveness and readability of material of this kind, it is suggested that the division be authorized to prepare, in cooperation with physicians on the State Health Department staff, a series of booklets or pamphlets dealing with diseases of special importance to the people of Alabama and viewing these diseases from the Alabama angle.

It is also recommended that, at such time as may be considered proper, arrangements be made for the preparation and reproduction of a series of charts, posters, diagrams, etc., showing morbidity and mortality trends, these to be kept in Montgomery and furnished to county health departments and other agencies and individuals needing them for health exhibits, fairs, etc.; that the film library, now the property of and available to only a comparatively small number of county health departments, be brought to Montgomery, made a responsibility of this division and made available to all county health departments; that this division be authorized to assemble package libraries on various diseases and various aspects of public health for use by schools, clubs, etc.; and that dioramas and other exhibit material be prepared as health education projects by WPA and NYA workers and made available for use as needed in various parts of the state.

BUREAU OF COUNTY HEALTH WORK

In November 1941 the Division of County Organization was given the status of a bureau and designated the Bureau of County Health Work. Concurrently, the Division of Public Health Nursing was transferred to it from the then Bureau of Child Hygiene and Public Health Nursing, to bring it under one direction with the Division of Medical Field Advisory Services. The report of the Division of Nursing appears in succeeding pages.

Normally, the Division of Medical Field Advisory Services of the Bureau of County Health Work has a staff of four physicians, each serving the county health departments in a quadrant of the state. However, when the director of the now-named Bureau of Maternal and Child Health became the Acting State Health Officer, one of the group was chosen as his acting successor in that bureau. Thus, at the close of 1941, the state's sixty-seven county health departments were receiving medical field advisory services from three physicians, one of them assuming responsibility for a second fourth of the state while continuing

to service the territory originally assigned him. It would seem that this arrangement will have to remain in effect until there is no longer a shortage of medical personnel.

The medical field advisers discharge important functions in the field of public health administration. Their duties are varied, including counsel with personnel of the departments in their respective districts, procuring initial appropriations, stimulating added appropriations, planning programs, acting as liaison officers between central administration and county health departments, exercising oversight in counties temporarily without health officers, adjusting differences arising between staff members, and assisting in maintaining an esprit de corps in the organization.

GENERAL RESPONSIBILITIES OF THE BUREAU

Among other responsibilities, the Bureau of County Health Work must interest itself in efficient personnel for and equitable allotment of funds to the several county health departments.

An efficient personnel is a trained personnel, and training is provided through field instruction under the direction of one of the medical field advisers, and through intramural instruction in schools of public health. Such instruction was offered to but few in 1941 because of scarcity of personnel. This is reflected in the experience of the past twelve months as it relates to county health officers. Eleven of those employed on January 1, 1941 are no longer engaged in public health work in Alabama, one is deceased, and two have been elevated to state service.

Allotment of funds is on the basis of need, the counties being grouped in brackets according to their ability to pay for health service. Those lowest in the scale of purchasing power bear 40 per cent of the cost of their respective county health departments; those next higher, 45 per cent; and on to the group of counties most able to pay, which bear 60 per cent of their respective budgets. Under this distribution no financial problems of great moment presented during the year. No one gainsays that added appropriations cannot be profitably employed in expansion of personnel. Indeed, under the above pro rata plan participated in by the state and counties sharing the cost of operation of local health services, additional nurses and sanitation officers were added to county health departments in 1941, thus intensifying programs and accomplishments.

ACCOMPLISHMENTS

The following tabulation is a consolidation of the activities of the sixty-seven county health departments in 1941:

<i>Communicable Disease Control</i>	
Admissions to service	3,378
Consultations with physicians	2,311
Field visits	22,272
Smallpox immunizations	59,783
Diphtheria immunizations	38,769
Typhoid fever immunizations	143,148
<i>Venereal Disease Control</i>	
Admissions to medical service	38,934
Clinic visits	192,147
Field visits	27,767

<i>Tuberculosis Control</i>	
Individuals admitted to medical service	11,203
Individuals admitted to nursing service	12,624
Clinic visits	14,684
Nursing visits	30,601
<i>Maternity Service</i>	
Cases admitted to medical service	13,983
Cases admitted to nursing service	25,572
Visits by antepartum cases to medical conferences	31,222
Nursing visits	64,155
<i>Infant Hygiene</i>	
Individuals admitted to medical service	4,819
Individuals admitted to nursing service	20,585
Visits to medical conferences	10,046
Nursing visits	57,147
<i>Preschool Hygiene</i>	
Individuals admitted to medical service	11,383
Individuals admitted to nursing service	14,303
Visits to medical conferences	15,416
Nursing visits	33,595
Inspections by dentists or dental hygienists	300
<i>School Hygiene</i>	
Inspection by physicians or nurses	82,665
Examinations by physicians	87,334
Individuals admitted to nursing service	4,919
Nursing visits	11,159
Inspections by dentists or dental hygienists	28,738
<i>Adult Hygiene</i>	
Medical examinations	17,417
<i>Morbidity Service</i>	
Medical visits	1,264
Nursing visits	5,330
Admissions to hospitals	124
<i>General Sanitation</i>	
Approved individual water supplies installed	1,768
Approved excreta disposal systems installed	19,058
Field visits	73,159
<i>Protection of Food and Milk</i>	
Food-handling establishments registered for supervision	6,937
Field visits to food-handling establishments	47,461
Dairy farms registered for supervision	1,056
Field visits to dairy farms	11,790
Milk plants registered for supervision	188
Field visits to milk plants	4,884
<i>Laboratory</i>	
Specimens examined	561,551

EAST ALABAMA HEALTH DISTRICT

In the preparation of this annual report it seems advisable to summarize the four years' experience of the project 1938-1941 inclusive.

Organization

The East Alabama Health District, created in 1938, initially served 7 counties in East Alabama, and in line with reorganization as of January 1, 1941 was expanded to include 13 counties. The staff which originally included advisory personnel in the fields of medical, nursing, engineering, clerical, pediatric, venereal disease, and dental

service was supplemented on January 1, 1941 by associates in medical and nursing service.

The financial support of the project, on a take-over plan for a 5-year period, shows, for the four-year period 1938-1941, a total expenditure of \$169,158.70; of which the state contributed 56.8 per cent, the Commonwealth Fund 30.8 per cent, the Rockefeller Foundation 10.4 per cent, and other sources 2.0 per cent.

Objectives

1. Development of more adequate health services in counties.
2. To provide advisory and specialistic services and to determine the best method, and intensity, of application.
3. To develop and operate a field training center.

A. Trend of Health Service Within District Counties

As a direct result of increased total service, local appropriations were raised by approximately \$22,500 annually. Personnel increases were seen in the nursing group from 23 to 39, sanitation officers from 11 to 16, and secretaries from 13 to 18. It is to be noted that changes in personnel were all too frequent with from $2\frac{1}{4}$ to $2\frac{1}{2}$ persons occupying each position. This tends very markedly to interfere with rapid progress in all fields. Coordination of voluntary and other official agencies was affected with health service where the problem presented. Hospital deliveries of both white and colored mothers showed a very decided increase during 1940-41, due mainly to hospital insurance, better economic status, and special maternal projects in Macon County. Health centers have increased from 13 to 38 to decentralize service.

Medical Service

With federal monies being made available for venereal disease and maternal child hygiene, and with the cooperation of local medical groups, a most remarkable increase is seen in these fields. Venereal disease clinics increased from 12 to 62, and maternity clinics from 0 to 19. The volume of service is indicated in venereal disease by total cases increasing from 2,385 to 6,122 and total visits to clinics from 38,439 to 96,301. Maternity clinics admitted 216 patients in 1938, increasing to 1,240 in 1941. Cases given postpartum medical examination also increased from 26 to 470.

Improved medical service is also seen in the fields of communicable diseases, in both case reporting and case supervision; and infant and pre-school hygiene, and school hygiene have shown a distinct let down even though an attempt is made to render a better type of service.

Nursing Service

Due to the increase in clinic activities, requiring active nurse participation which varies by counties from 23.5 per cent to 49.4 per cent, the available time for field service has been materially reduced. Even in the face of this fact the volume of nurse service has increased in both quality and quantity in practically all types of activity.

Most marked service increases are noted in venereal disease and maternal hygiene (prenatal

and postpartum). In general, however, throughout the area increases are noted in all types of service with the exception of tuberculosis and school hygiene. Increased nurse service has been materially aided by increased personnel and at present one county has 11 nurses, 2 counties have 5, one has 4, six have 2, and three have only 1.

Sanitation Officer Service

The food-handling establishment permit system is in effect in 12 of the 13 counties. Milk supply is improving both in quality and quantity with pasteurized milk making rapid progress in volume.

Sanitation, particularly in urban areas, is forging steadily ahead but the rural problem, with the exception of defense areas, is making slow headway. School sanitation is receiving more consideration, with surveys stressed and planning with school boards for a sound program.

Malaria is not a major problem in this area but where foci exist the ground-work is being laid for their elimination.

Health Education

Through visual methods health education has shown a decided increase during 1941 and 10 of the 13 counties have purchased sound-picture equipment and are Film Library members.

B. Provision of Advisory and Specialistic Services to District Counties

One must clearly visualize the reasons for establishment of a district organization in order to appreciate accomplishments and progress made by such an organization. Decentralization of personnel and not function is the first objective. Coordination of effort of division representatives comprising a district staff, however, is the major objective. A study of health services in the area served and an attempt to develop sound and progressive procedures and programs is an essential phase of activity. The district staff and organization is not a stop-gap preventing access to the central organization but is an administrative aid. All advisory and specialistic services are not represented on a district staff but these must also be coordinated with other services within the district.

Medical and Clerical Advisory Services

These services, through the process of appraisal study, have directed attention to health needs and total health service in each county. Special studies of health such as maternal hygiene, communicable disease control and personnel review have been quite helpful in effecting better organization.

The statistical clerk has been exceedingly helpful to both county and district personnel in special studies and in developing uniformity of instruction and usage in records and reports.

Nursing Advisory Service

The primary function of this service is the introduction and orientation of new nurse personnel in counties. Approximately $4\frac{1}{2}$ days were devoted to each new nurse during 1941. Through repeated supervision of routine functions, improved and more uniform procedures are developed in clinic service, program planning and technics in field nursing. A critical evaluation

of advisory service rendered, on an annual basis, has proven quite helpful in further modifying the approach made to counties.

Engineering Advisory Service

Training station activities are considered to be the primary function of this personnel and in 1941 twenty-six weeks were devoted to this service. Since 1939 the advisory service in sanitation has been handicapped in that the available time for its prosecution is quite limited. In spite of this handicap, however, stimulation of county personnel in program planning and surveying has been quite helpful. In 1941 sanitary facilities newly installed serve approximately 16,000 persons. School sanitation has also been stressed and results to date are encouraging. Malaria control in impounded water projects has been considerably improved.

Inspection activities in food and milk have shown rapid progress with 12 of the 13 counties under the food establishment permit system and pasteurized and raw milk improved both as to quality and quantity.

Pediatric Advisory Service

Frequent changes in personnel, in addition to dealing with a very complex approach to the problem of child health, has made it extremely difficult to accomplish objectives set. Consultation service during 1940-1941 has definitely improved from 40 new cases to 190. However, only 33 physicians out of 152 availed themselves of this service and that within 5 counties. A different approach is planned for 1942 in an attempt to accomplish better distribution of service as distance is a very decided factor.

Considerable thought and effort has been devoted to development of child health centers (from 0 to 18 in four years), the premature program with incubators and supplies, and improved nurse procedures through institutes. At least one more year of experimentation is indicated to prove or disprove the trend of service initially outlined as advisable.

Venereal Disease Advisory Service

Expansion in the venereal disease program which occurred in 1939-40-41 placed a heavy responsibility on this type of personnel. In spite of the marked increase in volume of service, the quality and completeness of the program in counties is yet quite unsatisfactory. War emphasis and intelligent direction of effort may accomplish more in 1942 in all phases of venereal disease control.

Refresher course facilities in Mobile should be more freely utilized. Follow-up nurse service must be expanded as part of a better case-finding and case-holding program.

Dental Advisory Service

School examination and school education dental activities have been intensively carried on during all four years of the project with approximately 20,000 children examined annually. It has been noted that the number of dental corrections as a direct result of such a program is limited to the upper economic bracket of the white population. Dental clinics were stressed and 9 such clinics organized in 1940-41. Addi-

tional clinic facilities will be organized in 1942. Dental corrections for both white and negro children are thereby provided and it is to this facility that we must look for accomplishment.

Consideration might again be given to the employment of dental hygienists for the educational program thus permitting the dental advisers sufficient time to materially expand corrective facilities.

Tuberculosis Diagnostic Service

This is one of the most outstanding high quality services in the area. Administrative reorganization of the service and provision of hospital facilities at LaFayette have permitted a sound basic program to be inaugurated. Ten of the 13 counties are served by this diagnostic service and 4 of these have made specific appropriations for tuberculosis hospitalization.

The medical profession, the public, and the appropriating bodies all hold this service in high regard and therefore quality service must be maintained.

In considering all advisory and specialistic services we believe that real progress has been made both in coordination of function, through conferences and planned schedules, and adapting the services to the needs and capabilities of the individual counties. Much of course remains to be done but the trend of the four-year service has been in the right direction.

C. Field Training Station

The training facilities were not sufficiently developed to justify inauguration of the program in 1938. Commencing in 1939 health officers, nurses and sanitation officers were given field training.

	1939	1940	1941	Total
Health officers	7	9	8	24
Nurses—regular	10	9	20	39
Nurses—special	---	---	6	6
Sanitation officers—reg. ...	5	14	20	39
Sanitation officers—special ---	---	---	2	2

Didactic instruction was given by the staff of the East Alabama Health District, by representatives from the central office of the State Health Department and by other cooperating agencies. Field service was largely confined to Lee County but during 1941 five district counties were used for observation purposes or actual field experience.

Training courses for all types of personnel are commenced at intervals of 6 weeks to coincide with the George Peabody academic schedule. Affiliation with George Peabody School of Nursing for rural experience as an accredited center was effected in 1940. Health officers are given 30 days of training, and nurses and sanitation officers, 6 weeks. A real attempt is made to give all trainees a well-rounded view of health service in which accepted methods and technics are demonstrated.

DIVISION OF PUBLIC HEALTH NURSING

On November 16, 1941 the Division of Nursing was transferred from the Bureau of Maternal and Child Health to the Bureau of County Health Work. The Division of Medical Field Advisory

Services and the Division of Public Health Nursing comprise the Bureau of County Health Work with Dr. Douglas L. Cannon serving as director of the bureau.

The adviser in midwife control was assigned to the Division of Maternal Hygiene of the Bureau of Maternal and Child Health. With this exception, the division personnel remains the same with the addition of a maternal and child health consultant who joined the staff on October 1, 1941. The maternal and child health consultant is responsible to the director of the Bureau of Maternal and Child Health for the program and is to work in close cooperation with the obstetricians and pediatricians within the bureau. She is responsible to the director of the Division of Public Health Nursing for techniques, and for working out plans in order that her services may be integrated with those of the general advisory nurses and others working throughout the state.

Public Health Nursing Personnel

Keeping the several county health departments with nurses is becoming increasingly difficult. Comparatively few nurses have been lost to the armed services, but the possible supply from which recruits may be had is limited. Several nurses have married and withdrawn from the work or gone elsewhere to live. One nurse accepted an appointment with the U. S. Public Health Service. To offset this, four nurses are on loan from the U. S. Public Health Service. Despite this rather discouraging picture, the number of nurses has increased and many of them have continued their education. Two hundred twenty-two (222) nurses are attached to the State Health Department and the several county health departments, an increase of 20 over last year. Below is the count of nurses as of January 1, 1942:

White	Supervisors	Staff
State Health Dept.	8	8
Dept. of Health, Rural	6	130
Dept. of Health, Urban	6	20
Totals	20	158
Negro	Supervisors	Staff
State Health Dept.	---	1
Dept. of Health, Rural	-	20
Dept. of Health, Urban	1	22
Totals	1	43

Training

The training program has continued in its several phases both at the state and local level.

District Conferences

District conferences were held at various centers in the early part of the year for the purpose of discussing the new records and the recording of services rendered. Nutrition conferences were held in the North Alabama District with the state consultant in nutrition leading the discussion. In the late summer, two one-day orthopedic conferences were held throughout the state. The first day was devoted to the medical and general aspects of the program with the medical and

nursing consultants of the crippled children's service participating.

Orthopedic nursing problems were discussed on the second day, with the district advisory nurse presiding and the orthopedic nursing consultant teaching and demonstrating. Since there was an unusually high incidence of poliomyelitis at this time, the need for this information was generally felt and the increased interest and service were attributed to the institutes. School health service institutes were held at a number of points. It is believed that district conferences should be continued since they bring knowledge and stimulation to staff members.

Introduction of New Personnel

Seventeen nurses were given the introductory course. The four nurses lent by the U. S. Public Health Service received their orientation in Lee County. Two nurses assigned to supervisory duties also spent some time in Lee County.

Study Leaves

Twenty-six nurses were given leaves of absence for study. Seven of these completed the requirement for the Certificate in Public Health Nursing.

Supervised Field Experience

The field centers were filled to capacity throughout the year. Seventeen students from 9 states took their field work in Lee County and Birmingham. Eight Alabama nurses received their field experience in the two Alabama centers.

Special Fields

Two nurses were given leaves for study in maternity and one in venereal disease study.

The Tuskegee school for training negro nurses in midwifery admitted four students on the 15th of September, 1941. Three of these students were sponsored by the State Department of Health.

Activities of Advisory Nurses

State advisory nurses render service to county health departments by observing and participating in home and clinic activities. The advisory nurse is prepared to render consultant service to the county health officer and public health nurses on all matters pertaining to acceptable public health nursing technics and procedures. The table below represents the activities in which the state advisory nurses engaged during 1941.

Midwife Control

The midwife consultant supplies subject matter for instruction and general guidance of the program of midwife control in Alabama. Fifty-four visits were made in 38 counties. The breakdown of the activities of the midwife consultant is included in the summary of activities for the Division of Public Health Nursing.

A total of 34.3 per cent of all Alabama women who had babies in 1939 were attended by midwives or received other than medical care. Seventy-two and nine-tenths (72.9) per cent of all negro mothers and 10.3 per cent of all white mothers were attended by midwives. A survey of registered and non-registered midwives is made annually. For 1940, sixty-five counties reported 2,280 registered and 622 non-registered

	HOMES VISITED										CLINICS						CONFER- ENCES		
	Families Visited	Antepartum	Postpartum	Infant	Preschool	School	Venereal Disease	Tuberculosis	Midwife	Other	Maternity	Child Health	Venereal Disease	Midwife	Other	No. Talks	With Health Officer	With Nurses	Other
McCraney	86	27	15	36	8	1	15	13		6	1	1	9	2	13		24	30	6
Parker	109	20	32	57	52	12	5	12	4	29	5	1	11		16	3	14	18	10
Pick	177	42	26	54	41	9	13	45	13	10	16	6	28	5	12	2	24	30	6
Owen	479	138	63	133	119	36	13	104	2	69	15	1	31		18	1	32	40	3
Lefevre	9	8	6	16	1	2			2	6	20	4	4		3		10	42	21
Murphy	155	15	21	22	10	6	3	7	75	9	9	9	17	31	6	9	53	60	17
Barclay	8	2		5				2			1		15	2		4	40	75	74
Totals	1023	252	163	323	231	66	49	183	96	129	67	22	115	40	68	19	197	295	137

midwives. These 2,902 midwives were supervised by county health officers and nurses through home, office and group meetings. Office visits made by midwives totaled 1,373; home visits, 2,-152; attendance at group meetings, 5,058—a total of 8,583 conferences held with midwives.

Movable School Nurse

Objectives of the Movable School remain the same; namely, improvement in farming practice, home making, and health and sanitation, through teaching and demonstrations. The unit consists of a farm demonstration agent, a home demonstration agent and a nurse. The nurse attached to the Movable School unit renders educational service both with the unit and alone. The following is a summary of her activities.

1. Number of visits to counties
2. Number of visits to communities
3. Number of demonstrations, health talks
4. Total attendance
- 41
- 186
- 442
- 8,484

Other activities included assistance at the annual clinic of the John A. Andrew Memorial Hospital, Tuskegee Institute. Five hundred eighty-two patients were examined and treated. The nurse also assisted with 4-H club examinations and annual home and farm week activities.

Comments and Suggestions

Public health nursing faces a challenge today. One of the strong features of the work has always been its wide home contacts. No distinction is made as to religion, race or economic level. In addition to skilled nursing care of the sick in their homes, the public health nurse instructs someone in the home regarding the care of the patient. She interprets the principles of healthful living necessary for the promotion of physical and emotional health and the prevention of disease. In no way does she attempt to take the place of a physician. A good public health nurse observes symptoms and indication of need for medical service. In a usual day's work, she could be heard to say many times, "Consult your physician."

In many instances, particularly in more rural communities, physicians are not and will not be there to consult. In certain fields, to a limited degree, clinics have provided medical care. It is quite likely physicians will not be available to serve in these clinics to the same extent they have in the past. What then can be done? A

combination of certain services may be considered. A more careful selection of cases for use is made of the time of the physician. Home nursing classes can be taught so that mothers will know how to nurse their own families. More and better nursing care can be given in homes. By persistence and the use of local and state resources, aid can be furnished in solving individual health problems. These are goals for 1942.

BUREAU OF PREVENTABLE DISEASES

DIVISION OF EPIDEMIOLOGY

The incidence of communicable diseases varies from year to year with certain long-time trends evident by study of the yearly reports over a period of time. Any one year must be compared to the average of a number of years as well as to the year or years immediately preceding. The year 1941 was not a favorable one in many respects as regards the incidence of communicable diseases. At least three epidemics of considerable extent swept through the state with large numbers of victims.

Influenza, with more than 34,000 cases reported and uncounted thousands not recorded, led the list. This epidemic began in December 1940, reached its peak in January and February of 1941 and then subsided. Fortunately, the disease was not of a particularly virulent type and the mortality did not correspond to the morbidity. Measles paid one of its periodic visits as it does every three or four years and accounted for thousands of cases.

Poliomyelitis was the third epidemic disease of the year and, as is always the case, created serious problems wherever it appeared. The cases were widely scattered throughout the state with the heaviest concentration in the counties of the north-central area. Walker County had the distinction of being the hardest hit, with Jefferson, Etowah and Calhoun following in order. No section of the state escaped entirely, however. The program inaugurated for control included diagnosis, nursing care, respirators where needed, orthopedic consultation and research. The Crippled Children's Service and the State Health Department worked hand in hand and pooled their resources so that trained nursing care was available to all, while the clinics of Crippled Children's Service are now caring for the after-effects of the epidemic. The National Foundation for Infantile Paralysis was extremely helpful. It

not only loaned four respirators to the state but also sent a staff of investigators to study the epidemic in Walker County. From this study certain facts of importance have already been reported. The transference of the infection to monkeys from flies captured in the vicinity of poliomyelitis cases was successful in one instance—the second time such a procedure has ever been carried out. Other observations regarding the method of spread in Walker County are to be published.

Diphtheria, after steadily declining for several years, showed an increased incidence as compared to 1940. There must be no let-up in the immunization program against this disease if the gains of previous years are to be maintained. Scarlet fever, whooping cough and mumps were all higher than in 1940 and higher than the median of cases in the past nine years.

On the favorable side of the ledger was another low for typhoid fever with only 170 cases reported. This disease has been steadily declining until it has now reached a point below which further decreases may be difficult to show. Smallpox was again at low ebb, and malaria showed a decided drop from the 1940 figures.

DIVISION OF VENEREAL DISEASE CONTROL

During the year 1941 there were reported 21,919 new cases of syphilis, a rate of 7.67 per 1000; 5,094 new cases of gonorrhea, a rate of 1.78 per 1000; and 152 new cases of chancroid, a rate of 0.053 per 1000. In comparison with 1940 this represents a marked increase in the reporting of new cases of syphilis and a slight increase in the reporting of new cases of gonorrhea. The increase in the new cases of syphilis was limited to the colored race since there was a slight decrease in the new cases of syphilis for the white race. The increase in the colored race was probably due to the finding of so many infected individuals during the serologic survey of registrants in October 1940. Of the new cases of syphilis reported for both races, 41.48 per cent were early syphilis (less than four years in duration). This is a marked improvement in comparison with previous years. Although there was a slight increase in the new cases of gonorrhea, this disease is still very poorly reported.

The distribution of free drugs to physicians, clinics and hospitals throughout the state for treatment of syphilis was maintained during the year. The distribution of free drugs for the treatment of gonorrhea and the other venereal diseases was continued but was limited to clinics. There were 506,235—0.6 gram doses of neoarsphenamine, 26,457—0.06 gram doses of maphasen, 431,269 cc. of bismuth preparations, 23,264 cc. of mercury benzoate, 13,539 mercurettes, 515,250 five-grain tablets of sulfanilamide, and 425,000 seven-and-a-half grain tablets of sulfathiazole distributed. In addition to the distribution of free drugs, the supplying of basic equipment was continued to those venereal disease clinics beginning operation during the year.

There were 148 clinics in operation in 67 counties. Twenty-two clinics were organized in 1941 and one county began operating a clinic for the first time. There were three clinics discontinued

during the year. In twenty-three counties there was only one clinic in operation but in forty-four counties two or more clinics were in operation.

Subsidization of all venereal disease clinics operated by the county medical society, and staffed by physicians on a rotary basis, was continued in 1940. The schedule of fees for clinic service remained the same.

The operation of a travelling unit in Macon and Greene Counties for the diagnosis and treatment of venereal disease was maintained during the year.

There were four physicians on the staff of the division for the first six months. However, one physician loaned to Alabama by the U. S. Public Health Service was transferred and one resigned leaving only two physicians as consultants in the state during the latter half of the year. Most clinics were visited every two to three months during the year.

An additional, specially trained nurse in venereal disease control activities was added to the staff, making a total of five nurses and a supervisor. In order to improve case holding and case finding activities in the counties, these nurses were loaned to the counties for a period of three to four months or longer to demonstrate case holding and case finding and to bring the venereal disease case load up to date. When the specialized nurse finishes in a county, the local nurse takes up and maintains these activities. These activities were more or less limited to those cases of syphilis that are a public health problem; early syphilis (less than four years in duration), congenital syphilis, syphilis in pregnancy and in women in the child-bearing age. Case holding and case finding were also applied to gonorrhea and the other venereal diseases. During the year twelve counties had the services of these specialized nurses. In each county the clinic attendance was increased and in some the increase was remarkable.

Educational procedures were continued during the year and many lay audiences were reached through talks and talking pictures. Many bulletins were distributed throughout the state. The one week's refresher course each month in venereal disease was continued at the Mobile City Hospital venereal disease clinic. Fifty-one physicians attended the course during the year. One staff consultant in venereal disease attended the four weeks' refresher course at the U. S. Public Health Service venereal disease clinic at Hot Springs, Arkansas.

DIVISION OF TUBERCULOSIS

Continuous offensive tactics are being persistently resorted to all along the tuberculosis front in our effort to harass as well as eliminate this scourge which killed 1,473 citizens of Alabama in 1941, according to the provisional figures now available. This compares with 1,507 who died of tuberculosis in 1940.

In spite of the loss of some of the division's personnel through death, illness, and the demands of the military regime during 1941, the sanatoria and the travelling x-ray units have carried on; and have continued the high quality of their treatment, surgical procedures, and case-

finding programs, respectively. It was found necessary to discontinue one of the travelling units. In order to give as much stimulation and encouragement as possible to the counties having the largest incidence of tuberculosis, the three remaining units are now assigned for one or two-day clinics as the situation demands. Less frequent one-day assignments are accorded the counties in the lower incidence areas, thereby spreading the service as equitably as possible with ever the urge for locating and classifying all tuberculosis in this state.

In arranging the sanatoria in the picture of the tuberculosis set-up in Alabama, they should be placed well out in the foreground as they perform a multiplicity of functions, the effects of which extend out to the far reaches of the state. Their immediate and most apparent contribution is the treating of treatable cases. However, services of long-range value are the thirty-day hospitalization of chronic, far-advanced, or untreatable cases for education of the patients so they will absorb an intelligent comprehension of their disease and may thereafter be counted upon to conduct themselves in such way when back home that their contacts will be less apt to develop the infection—a valuable control measure. Also, these institutions are often the alma mater to which ever-growing numbers of discharged patients return for periodic check-ups and advice. It is also the place to which many return for interval treatment such as pneumothorax refills. These ex-patients are the disciples that carry the educational program back to their home communities and into the sundry social levels from which they come.

While the number of subsidized beds for tuberculous patients has, of necessity, remained at 480, it is not to be inferred that the tuberculosis picture is stalemated. When it is considered that each one of these beds has permitted the treatment and education of an average of $2\frac{1}{2}$ patients per year, this adds up to a rather encouraging total of cases treated.

It should also be mentioned and recorded here that the program carried on by the Alabama State Tuberculosis Association in conjunction with the National Tuberculosis Association, organizations financed each year by the Christmas seal sale campaign, coincides and interlocks very plausibly and helpfully with the state program. Each organization is able to assist the other in accomplishing their oneness of purpose; namely, a two-pronged enpocketment of the common foe, tuberculosis.

During 1941 the state subsidized two pneumothorax refill clinics: one at Eufaula and the other at Selma. This, so far, is a gesture on a microscopic scale toward the solution of a problem especially acute in the rural communities of the state. Such a clinic on a rather large scale has been carried on at Tuscumbia for well over a year with outstanding success. Now, with the rationing of tires, and possibly gasoline, it will be increasingly difficult for many patients, well on their way toward becoming arrested or healed cases, to secure the necessary transportation to the sanatoria for their pneumothorax refills. We

trust this obstacle can be surmounted by increased numbers of subsidized clinics.

The travelling x-ray units last year held 596 one-day clinics and made 12,052 x-ray examinations and reexaminations, of which 2,058 were positive, 380 suspects, 185 pulmonary pathology other than tuberculosis, and 9,386 negative. Of course, this is an advance-guard action making it possible for the most rural sections to receive ultra-modern methods of diagnosis. In this connection, the miniature film is a much talked of, a much discussed, and is becoming a much experimented and tried procedure. We are observing these experiments, realizing that out of them will probably evolve a more economical and, by the same token, a more profusely useable recording medium.

The state is fortunate to have the U. S. Public Health Service conduct a tuberculosis survey and carry on a research program based on resultant findings emanating from the previous four years' studies. This division is cooperating in rendering it all the assistance possible toward facilitating its work in the interesting studies being made.

DIVISION OF INDUSTRIAL HYGIENE

The activities of the Division of Industrial Hygiene for the calendar year 1941 may be summarized in two contradictory statements: first, in no year has there been so much transition and confusion; and, secondly, never before has so much been accomplished.

Shortly after the start of the year the first director of the division left the State Health Department and the program was without direct, immediate supervision for the remainder of the first six months due to unavailability of personnel. Work was continued on the preliminary survey that was carried on in Jefferson County and when a new director was obtained on July 1 the report of this work was practically complete, and it was soon ready for publication. Some 200 copies have been sent out all over the country. Requests for copies have been received for the reference libraries of the Universities of California, Minnesota and Iowa, as well as the Edgewood Arsenal and the Washington, D. C. Naval Yard.

During the summer months the engineer of the division was given the privilege of attending the training course of the Division of Industrial Hygiene of the National Institute of Health at Bethesda, Maryland, where he received first-hand experience in the use of all the technical equipment to be used in our industrial hygiene studies.

A file of all industry in the state has been developed and it includes all industries that employ more than seven persons. In all more than 7,000 industries are included.

With the development of the national defense war and victory effort, Alabama has assumed, or has had thrust upon her, a major share of these activities. It was found that with the facilities present in the State Health Department, the Division of Industrial Hygiene could not possibly cope with the problems that would present. Following a consultation with representatives of the U. S. Public Health Service from the Division of Industrial Hygiene, arrangements were made

whereby each of the interested parties would assume its designated share in the development of complete offices and laboratories at 1911 4th Avenue North, Birmingham, Alabama.

The end of the year 1941 finds the division in the process of moving into its new quarters in the center of the industrial area of Alabama, and within three hours' drive of well above seventy-five per cent of all industry within the state, where activities will soon begin on some of the more pressing problems which are confronting industry and the industrial worker.

BUREAU OF LABORATORIES

DIAGNOSTIC DIVISION

More specimens were examined in the Bureau of Laboratories during the calendar year 1941 than ever before during a comparable period. In Table 1 a comparison of the number of specimens of the different types handled during 1940 and 1941 is presented. Of the total of 660,700 specimens examined during 1941 some 65,609 were left-overs from the wholesale blood-letting on October 16, 1940 of registrants for military service, or were similar specimens taken on these men in the six weeks immediately following registration day. However, subtraction of this number of serologic survey specimens from the total still leaves 64,300 more specimens handled in 1941 than in 1940.

Examination of Table 1 reveals the fact that material losses occurred in the number of specimens handled in the case of pneumococcus typing, malaria smears, brains for Negri bodies, and

Table 1

A Comparison of the Number of Specimens of the Different Types Examined During 1940 and 1941

<i>Kind of Examination</i>	1940	1941	<i>Gain or Loss</i>
Diphtheria	6,718	9,295	+ 2,577
Vincent's infection	1,789	3,640	+ 1,851
Pneumococcus typing	564	373	— 191
Enteric organisms	12,375	13,169	+ 794
Agglutination tests	8,694	9,745	+ 1,051
Malaria	26,182	21,527	— 4,655
Intestinal parasites	42,978	50,680	+ 7,702
Tests for syphilis	268,258	391,666	+123,408
Gonorrhea	22,629	26,307	+ 3,678
Tuberculosis	19,730	20,525	+ 795
Rabies	713	592	— 121
Water	11,364	11,855	+ 491
Milk	25,699	25,237	— 462
Meningococcus	65	59	— 6
Food poisoning	4	30	+ 26
Miscellaneous	11,683	9,628	— 2,155
Total diagnostic ..	459,445	595,091	+135,646
Registrants, Kahns ..	136,955	65,609	— 71,346
Grand Total	596,400	660,700	+ 64,300

milk samples. On the other hand appreciably more specimens were submitted for examination for diphtheria, Vincent's infection, enteric group organisms, agglutination tests, intestinal parasites, tuberculosis, water analysis, and for evidence of venereal infection. By far the greatest increase in any single type of specimen occurred in the case of those sent in from cases of suspected venereal disease.

Table 2

The Relationship of Diagnostic Tests for Venereal Disease to the Rest of the Examinations Made in the Bureau of Laboratories
1941

Laboratory	Venereal Disease Tests							Routine Diagnostic Tests				
	Total Exam-inations	Darkfield	Diagnostic Kahns	Gonorrhea	Regis-trants, Kahns	Total	% of Total Exam-inations	Intestinal Parasites	Milk and Water	Miscel-laneous	Total	% of Total Exam-inations
Montgomery	178,930	184	105,467	4,846	22,485	132,982	74.3	18,835	5,111	22,002	45,948	25.7
Birmingham	189,061	113	114,915	8,440	19,208	142,676	75.5	8,956	16,491	20,938	46,385	24.5
Mobile	77,735	91	46,489	5,373	1,781	53,734	69.1	6,822	2,673	14,506	24,001	30.9
Decatur	46,094	24	26,422	1,774	4,350	32,570	70.7	1,256	2,914	9,354	13,524	29.3
Tuscaloosa	38,212	11	25,624	1,184	2,582	29,401	76.9	3,838	1,228	3,745	8,811	23.1
Anniston	29,446	27	21,547	1,194	254	23,022	78.2	909	2,719	2,796	6,424	21.8
Selma	41,901	33	26,511	929	1,546	29,019	69.3	3,308	4,171	5,403	12,882	30.7
Dothan	32,226	8	11,306	1,009	9,771	22,094	68.6	4,962	1,019	4,151	10,132	31.4
Huntsville	27,095	12	12,882	1,558	3,632	18,084	66.7	1,794	766	6,451	9,011	33.3
TOTALS	660,700	503	391,163	26,307	65,609	483,582	73.2	50,680	37,092	89,346	177,118	26.8

From Table 2 it is seen that venereal disease examinations constituted 73.2 per cent of all examinations made in the bureau during the year. Likewise, it is seen that in the branch laboratory doing proportionally the least amount of this work it was nevertheless 66.7 per cent of the total, while in that branch doing the most it was 78.2 per cent of the whole.

Of special interest in connection with the tests for syphilis is the decreased utilization of the darkfield examination of chancre fluids, though for several years special efforts have been made to encourage doctors to use this facility. It may be noted, however, that although the total number of specimens from suspected cases of primary syphilis was 26 less in 1941 than in 1940, there

was an actual gain in the number of specimens of this type examined in five of the nine laboratories. For this reason it is believed that there may be a somewhat more general appreciation, among the physicians of the state, of the value of this service. The falling-off in darkfield examinations in the Montgomery laboratory is accounted for by the fact that the Division of Venereal Disease Control was removed from the building housing the State Department of Health to quarters several blocks distant from the laboratory.

Table 3 compares the darkfield examinations made during 1940 and 1941.

Table 3
A Comparison of Darkfield Examinations by Laboratories 1940 and 1941

Laboratory	1940	1941	Gain or Loss
Montgomery	244	184	—60
Birmingham	121	113	— 8
Mobile	100	91	— 9
Decatur	13	24	+11
Tuscaloosa	2	11	+ 9
Anniston	24	27	+ 3
Selma	7	33	+26
Dothan	13	8	— 5
Huntsville	5	12	+ 7
Total	529	503	—26

During 1941 the effort to confirm, by isolating the etiologic agent, the cases of Brucellosis showing agglutinins in titres of 1:80, or above, was continued. Table 4 indicates the number of clot cultures and citrated blood specimens from which isolations were attempted. From this compilation it will be seen that 15 recoveries of *Brucella* were obtained; 11 were of the *Brucella suis* and 1 of the *Brucella abortus* species.

Table 4 Results of Cultures for Brucella			
No. of Cultures	Pos.	Neg.	To Be Typed
145	15	130	3
<i>Br. suis</i>		<i>Br. abortus</i>	
11		1	

In 1941 the decline in the demand for pneumococcus typing first noted in 1940 was further extended. Table 5 presents the statistics relative to the number of sputa submitted for typing and the incidence of types as determined. The predominating type in 1941 was type I in contrast to type III in 1940. Type III was next most frequently encountered, however, with types V and VII occurring with next and equal frequency.

Table 5 Pneumococcus Typing		
Types	1940	1941
I	38	21
II	7	4
III	44	16
IV	6	8
V	22	14

VI	4	7
VII	21	14
VIII	12	7
IX	5	1
X	8	2
XI	5	2
XII	8	1
XIII	0	1
XIV	5	4
XV	3	2
XVI	0	4
XVII	2	2
XVIII	4	2
XIX	9	7
XX	5	2
XXI	2	0
XXII	1	2
XXIII	4	3
XXIV	6	1
XXV	1	1
XXVII	0	1
XXVIII	0	3
XXIX	1	1
XXXI	1	2
XXXII	3	2
XXXIII	0	1
Unable to type	0	2
Mixed	7	6
	234	146
	1940	1941
Positive	234	146
Negative	307	211
Unsatisfactory	23	16
Totals	564	373

BIOLOGIC DIVISION

During the year 1941 the following products were prepared by the biologic division and distributed from the Bureau of Laboratories.

Table 6 Biologic Products Prepared and Distributed	
Typhoid vaccine	347,580 cc.
Diphtheria toxoid (alum)	136,290 cc.
Diphtheria toxoid (plain)	1,248 cc.
Schick test toxin	2,742 cc.
Rabies vaccine	787 treatments
Sterile normal saline	94,680 cc.
Sterile distilled water	5,023,850 cc.
Silver nitrate solution	65,000 ampules
Mercury benzoate solution	23,510 cc.

In addition to the above the division also filled, packaged and distributed 875 cc. of tuberculin purchased from a commercial laboratory.

The volume of distilled water distributed during the year showed a substantial increase over the previous year as the volume of this product increased from 3,162,650 cc. in 1940 to 5,023,850 cc. in 1941. This represents an increase of 1,861,200 cc. over the amount distributed during the year 1940. To meet these demands 75,213 bottles of the 60 cc. size and 2,318 bottles of 500 cc. capacity, were distributed. Despite the fact that every effort was made to have these bottles returned, after the water was used, only about 60

per cent were returned for refilling. This necessitated putting into use more than 20,000 new bottles during the year, and since the bottles are of special "Non-Sol" glass, they represented a sizeable item in the laboratory operating budget.

The amount of typhoid vaccine distributed during the year showed a decided drop compared to the previous year. During 1940 the division made and distributed 647,460 cc. of this product as compared to 347,580 cc. for 1941. This is 299,-880 cc. less than was distributed the year before and incidentally was less than has been distributed in any single year for many years. This was doubtless due to the adoption of new immunization procedures which required a smaller volume of vaccine than had been used previously.

The distribution of diphtheria toxoid showed a slight increase over previous years although the demand for this product seems to remain fairly constant from year to year.

The demand for rabies vaccine is still on the decline as demonstrated by distribution figures. During the year 1941, only 787 treatments were distributed as compared to 1,066 in 1940.

Studies on the mouse protection test for determining the potency of rabies vaccine, that were started in 1940, were continued during 1941. Several lots of vaccine of routine production were assayed by means of this test; likewise, several vaccines from other sources were subjected to this test in collaboration with other laboratories.

SPECIAL ACTIVITIES AND RESEARCH

Syphilis

1. Serologic Evaluation Study

The Bureau of Laboratories in 1941 again participated in the Evaluation Study of Serodiagnostic Tests for Syphilis conducted each year by the U. S. Public Health Service. As usual, in this evaluation the check specimens submitted by the Service were subjected to our routine diagnostic Kahn standard test. The results of our tests were then compared with those of all other laboratories, which employed the same diagnostic test, participating in the study as well as with those obtained by the author-serologist. The final tabulation gave Kahn's laboratory 79.2 per cent in sensitivity and 100 per cent specificity, while Alabama's rating was 67.0 per cent in sensitivity and 100 per cent specificity.

In addition to evaluating our routine diagnostic standard Kahn test, this year a one-tube modified diagnostic Kahn test employing 0.2 cc. serum and 0.02 cc. antigen was entered for experimental evaluation. The results, based on examination of the same specimens as were used in the standard Kahn test were 72.2 per cent in sensitivity and 100 per cent specificity.

2. Serologic Survey of Selective Service Registrants

In the annual report for 1940 reference was made to the serologic survey undertaken in Alabama on men who registered for military service on October 16, 1940. As the serologic tests of these specimens had not been completed at the end of 1940 no definite figures with reference to the survey were available for the annual report for that year. Completion of these serologic tests

early in 1941 makes possible presentation at this time of the final results:

Specimens collected	203,972
Specimens unsatisfactory	7,967
Specimens examined	196,005
Positive	17,414
Doubtful	2,379
Negative	176,212
Per cent positive	9.0

Stream Pollution

During the year, at the request of the Bureau of Sanitation, special study was made of water samples collected from the Chattahoochee and Bon Secour Rivers with a view to determining the density of pollution as expressed in terms of the M. P. N. of *Escherichia coli*. The Chattahoochee investigation was related to a water supply problem while the Bon Secour study was in connection with the sanitation of certain oyster bearing areas.

Rabies Vaccine

As the result of conferences, attended by the Director of Laboratories, at the National Institute of Health and the Bureau of Animal Industry in Washington, the bureau participated in several cooperative tests designed to evaluate the mouse-test method of determining the immunizing potency of rabies vaccine. The other laboratories engaging in this study were those of the rabies study of the Rockefeller Foundation in Montgomery, the Georgia State Department of Health, the National Institute of Health, the Bureau of Animal Industry of the U. S. Department of Agriculture and the Rockefeller Institute.

Frei and Ducrey Antigens

During the course of the year the Bureau of Laboratories made available to the clinicians of the state diagnostic Frei and Ducrey antigens. These preparations were made from aspirated bubo pus and cultures of the Ducrey bacillus respectively. In the standardization of the products valuable assistance was received from Dr. E. S. Sanderson of the Georgia Medical School, Augusta.

Phosphatase Test

As a preliminary to the possible introduction of the phosphatase test as a routine method of detecting under-pasteurized milk and dairy products a study of this technic was undertaken. At the end of the year the study was not complete but examination of the presumably pasteurized products from a number of dairies indicated that their treatment was unsatisfactory as there was frequent evidence of under-heating, too short holding at pasteurizing temperatures, or the addition of raw milk subsequent to pasteurization.

In-Service Training

During the academic year 1941-42, as for several years past, the Bureau of Laboratories received two scholarship allotments which made it possible to send two selected individuals away for a full year each of special training. Under this arrangement one student spent the year at the Johns Hopkins University School of Hygiene and Public Health, and the other at the University of Chicago.

BUREAU OF SANITATION

On March 7, 1941, Mr. George H. Hazlehurst, the beloved and honored Chief Engineer and Director of the Bureau of Sanitation, passed away. The late Dr. J. N. Baker, former State Health Officer, remarked upon his death as follows: "Mr. Hazlehurst was one of the outstanding sanitary engineers in the whole South, and was recognized as a leader in the field of sanitation not only in the state but throughout the country."

On July 18, 1941, Mr. D. S. Abell was appointed Chief Engineer and Director of the Bureau of Sanitation.

There were sixty-eight changes in sanitation officer personnel during the year. There has been a serious loss of personnel to industry. The Bureau of Sanitation will probably lose a total of eight men who are reserve officers. Three had been called to the Army by the end of the year.

In addition to the high turnover of the personnel in the county health departments, as well as the central organization, the sanitation and inspection personnel have been increased in critical areas. These critical areas important in the war effort comprise a total of 47.5 per cent of the entire area of the state of Alabama when described in circles with radii of twenty-five miles each. A great portion of the increased service in these areas has been made possible through the assignment of engineers by the U. S. Public Health Service for work on general sanitation and malaria control.

In spite of these difficulties, every effort is being made to continue the work of the bureau directly and through the local departments in the reduction and control of typhoid fever, malarial fever, undulant fever, amebic and bacillary dysentery, hookworm and food poisoning. Other diseases are involved as the control of modes of transmission respond to environmental, insect or food control.

One of the most gratifying results of the year's work was the application to the Defense Public Works Administration by the City of Mobile for funds with which to construct major water and sewerage improvements including a water purification plant.

DIVISION OF ENGINEERING

Water Supply and Sewerage

The national defense program in Alabama demanded that engineers with this division devote considerable time on public water supplies and sewerage in emergency areas. During the year numerous conferences were held with officials of defense projects concerning the development of water supplies and sewerage works proposed to serve properties under development. These conferences were followed by the submission of detailed plans and specifications of the proposed work which material was reviewed, checked, and commented upon by the engineers of the division. Twelve water supplies and ten sewerage works were installed at Army and Navy posts and defense plants. In most instances an inspection was made of the completed projects and instructions given in regard to operation. Reconnaissance surveys made by various federal agencies also

consumed the engineers' time in supplying available data.

The defense activities stimulated, or rather made it necessary that municipalities and subdivisions make improvements to their water supply and sewerage systems. In this connection, Auburn, Chickasaw, Gadsden, Montgomery, Talladega and the Pineda Water Company, Mobile, Alabama, made extensive improvements to their water works. Sanitary sewer extensions were made in several of the towns and cities to care for the increased population. Water works projects at Childersburg and Florence; and sewerage treatment plants at Jacksonville, Sylacauga, and Talladega, were under construction at the end of the year. Many more municipalities located in defense areas plan to enlarge and improve their water works and sewerage systems during the coming year in order to care for demands made by increased populations.

One of the functions of the division, required by legislative acts, is to check all plans and specifications pertaining to proposed new public water supplies and proposed additions and alterations to systems in service. Plans were received, checked and approval given to sixteen projects for the purpose of financing; plans were checked and approval given to thirty-eight new water works projects; and thirty-four permits were issued for major alterations. Relative to sewage works a total of sixty-two sets of plans were submitted, examined, and permits issued. Projects included sewer extensions, new sewage treatment plants and additions to existing plants. The work for which permits have been issued represents a total monetary value of \$5,911,000 for water works improvements and \$5,632,319 for sewerage works.

In addition to water works at Army and Navy posts, eight new water plants were completed, twelve water works developed new sources of supplies or installed new plants, and nine plants and systems were under construction at the end of the year. In addition to the above thirty-three, major improvements were made to other water works. A total of twenty-four sewerage projects were completed and several were under construction at the end of the year. Supervised public water supplies are available to approximately forty-one per cent of the state's population, while sanitary sewer systems are available to about twenty-six per cent.

The state law requires that all public water supplies submit samples of water for bacteriologic analysis to a state laboratory at ninety-day intervals, or more often if required. A total of 7,400 samples were submitted to the laboratories during the year and the reports of the analyses interpreted by the department. A total of 24,018 tubes containing 10 cc. of the finished water were examined and only 3.84 per cent were positive for bacteria of the coli-aerogenes group. Eighty-four letters were written to responsible water works officials relative to delinquent samples, while 241 were written in regard to unsatisfactory reports of analyses.

Each public water supply operating in the state was visited at least once by an engineer from the division and reports including recommendations

prepared and transmitted to responsible officials. A total of 287 inspections were made in this connection. When plants are visited the physical equipment is checked and detailed instructions given to the operator. In most cases defects or needed improvements were called to the attention of both the operator and responsible official in person. Twenty-two routine visits and twelve special visits were made to sewage treatment plants. Special visits were generally made to place plants in service, and to instruct operators.

The department continued to report to the U. S. Public Health Service, for certification, public water supplies used by interstate carriers. Approximately 100 inspections were made of the watering facilities of interstate carriers, reports prepared covering the findings, and recommendations made. The reports were transmitted to the U. S. Public Health Service for their consideration. The greater part of this inspection work was done by county sanitation officers and district engineers.

During the year an outbreak of stomach disorders occurred in Gadsden. The number of cases was estimated to be in the thousands. The infection was presumed to be due to the public water supply. The water plant in service at that time was old and operating above the recommended capacity. On investigation it was found that the hose from the chlorinator to the filtered water had been disconnected. The system was thoroughly sterilized immediately after finding the chlorine hose disconnected. The old plant has now been replaced with one of modern design.

Only one municipality, Montgomery, experienced a water shortage. The responsible officials have taken steps to increase the source of supply.

The bacteriologic study of the Chattahoochee River water, with reference to the Lanett and Fairfax water treatment plants, was completed. The studies indicated that the raw river water contained bacteria of the coli-aerogenes group in quantities above that recommended for the treatment process employed at these two water plants. The high bacteria contents were due mainly to the discharge of untreated sewage into the river by West Point, Georgia, and Lanett, Alabama. Recommendations were made in regard to corrective measures and the owners of the water works have taken action to chlorinate the raw water before it is applied to the filters. This is considered as a temporary measure only until some corrective steps are taken to secure a satisfactory raw water supply.

The field of private water supplies is, in general, a function of the county health departments. However, during the year a number of inspections were made by engineers of the division and 1,750 samples were submitted to the laboratory from private sources and examined bacteriologically. Realizing the need for material, particularly from an educational standpoint, a preliminary bulletin was prepared concerning water supplies other than public and submitted to the county health departments for their review and criticism. It is planned to publish a bulletin after all criticisms are received.

The national defense activities in the state made it necessary for the division to devote con-

siderable time to water works and sewage projects pertaining thereto. The normal routine duties were carried on, together with the necessary defense work, with no increase in personnel.

Swimming Pools

As stated in previous reports, the department does not have statutory control and supervision of swimming pools or other swimming facilities. The recommendations on the design, equipment, and operation of swimming pools are in accordance with the "Report of the Joint Committee on Bathing Places, Conference of State Sanitary Engineers, 1937."

No active program was undertaken in this field, due primarily to the lack of personnel and the need of assigning available engineers to more pressing problems.

On June 3, two of the department's engineers attended a meeting in Chattanooga, Tennessee, of the subcommittee appointed in 1940 to discuss the committee's report and studies made by the Tennessee Valley Authority in regard to recreational facilities in the Tennessee Valley.

The results of bacteriologic analyses of samples of water from the impounded reservoirs indicated that some of the areas were receiving only a small amount of pollution. It was decided by the committee that additional studies would be carried out with reference to particular areas rather than the river, reservoirs, and tributaries as a whole.

Basic Sanitation and the Control of Enteric Diseases

In municipalities and rural areas where sewers are not available, septic tanks and pit privies are necessary as a protection against hookworm and enteric diseases. There were seventy-two sanitation officers in fifty-seven counties engaged in this activity as a fundamental item of service. To the number already protected were added 94,070 persons, while restoration was made to 5,160 persons. This was accomplished by the installation of 16,606 pit privies, septic tanks and sewer connections.

Sanitation in incorporated towns and cities can be, with satisfactory private and public financing, placed on such a basis as to adequately protect the public health. The same situation does not exist in the areas of the county outside incorporated jurisdiction. Alabama must look to additional legislation dealing with the authority of county government for a full solution of its hookworm and enteric disease problem.

Cooperation was had with the following agencies in the construction of septic tanks and privies, and the measure of participation is stated.

Farm Security Administration

Privy plans and specifications were drawn up in cooperation with this division and adopted by two divisions of the Farm Security Administration—namely, the Rural Rehabilitation Division and the Tenant Purchase Division. A clear and definite understanding between all concerned resulted in a well-rounded program, which, however, was limited to a small number of counties and resulted in a comparatively small volume of work being completed. It is hoped that a more

extensive program can be undertaken by this agency in the ensuing year.

Federal Housing Administration

This division cooperated with the Federal Housing Administration as in previous years in the installation of septic tanks on properties securing loans through that agency. The agency had drawn up and adopted specifications governing septic tanks and disposal fields. The specifications are intended to fully cover the requirements in regard to commercial tanks, also the type recommended by this department. Requirements with reference to materials are administered by the Housing Administration.

Work Projects Administration

In the field of sanitation the Work Projects Administration continued to play a prominent role. However, the participation was less than during the previous year. The fact that only five counties had units of the project in operation at the end of the year would definitely indicate the trend toward non-participation. This trend is due largely to additional restrictions placed upon the operation of the sanitation project. Expenditures by the Administration amounted to \$180,230.00, with individuals and school authorities furnishing \$121,900.00.

National Defense Areas

The division was called upon to assist in giving constant advisory aid and technical direction to sanitation activities caused by the rapid influx of civilian and army population to certain defense areas in the state. The division assisted in the drafting of recommended regulations to control the construction and maintenance of tourist camps, trailer camps, tent camps, and bunk houses in the counties affected. An extra district engineer was made available to give direction to sanitation activities in these areas.

Sanitation Personnel Training

It is recognized that training of personnel is an essential function of the Bureau of Sanitation. Five sanitation officers were sent to Vanderbilt University for a three months' special course in sanitation. Twenty-one trainees as sanitation officers were given field training and assigned to counties. The division continued to realize full benefit from the field training center in the training of sanitation officer personnel. The importance of this training has been magnified as the necessity for lowering of basic qualifications for trainees has been caused by the demands of the Army and war industry on the group best qualified.

Malaria Control

Before a sound program for the control of malaria can be inaugurated in any area, it is first essential that all factors having a bearing on the problem be determined and analysed. Such a study and analysis was begun in the eight Tennessee Valley counties in 1937. Prior to 1941, these studies had been completed in seven of the counties: namely, Lawrence, Jackson, Marshall, Limestone, Lauderdale, Colbert and Morgan. Final reports were prepared, setting forth the problem in each county and recommending a solution.

Early in 1941, the study in the eighth county, Madison, was completed and a similar report prepared. During the year, abstracts of the reports of Colbert, Lawrence, Morgan, Limestone and Madison counties were prepared and printed in bulletin form. These abstracts, together with a bulletin entitled Malaria which was published in February, are being used to acquaint the people with facts concerning malaria, the problem it presents in their county, and how it may be solved by an organized control program. Under the authority of an amendment to the state constitution, the Colbert County Court of Commissioners established a malaria control district comprising roughly the northeastern one-third of the county. In July, the qualified voters residing in this district voted to levy a three-mill tax for a period of ten years to be used exclusively for the control of malaria in the district. Beginning in October 1942, it is expected that from \$12,000 to \$15,000 annually will be derived from this tax. The control program, consisting principally of construction and maintenance of drainage ditches, will be administered jointly by the Colbert County Health Department and the County Commissioners' Court. A pioneer step has been taken by Colbert County. It is felt that the future of organized malaria control work in Alabama will be directly influenced by the degree of success attained by the Colbert County program.

The drainage program in Houston County, which utilizes WPA labor and a county-owned dragline, was operated throughout the year. With the exception of this project, all drainage performed under the state-wide WPA malaria control project was confined to areas certified by the U. S. Public Health Service and the Army to be of national defense significance. Three WPA drainage projects were completed and five others were in operation at the close of the year.

Control of *Anopheles quadrimaculatus* mosquito production on major impoundages was, in general, satisfactory except on Bankhead, Purdy, Guntersville and Wheeler. The subnormal amount of rainfall during the spring and early summer followed by heavy rains in July was, to a large degree, responsible for difficulties encountered in controlling mosquito production. Vegetation which invaded the zone of draw-down during the low water stage presented conditions favorable for the production of *Anopheles quadrimaculatus* mosquitoes when the lakes returned to their normal elevation. Due to the increased power demands for national defense industries, the desired weekly fluctuation of the water level was not obtained on Wheeler and Guntersville reservoirs. The importance of water level fluctuation is brought out by the experience on Guntersville reservoir where cyclic fluctuation was employed during 1939 and 1940 but not during 1941. Even though an intensified larvicidal program was carried out, the average weekly mosquito catch was almost twice that of the preceding years. The construction of an experimental dyking and dewatering project was begun during the year in one area of Wheeler reservoir. It is felt that the completion and successful operation of this project will be a pioneer step toward controlling mosquito production in

areas which cannot be controlled economically by the conventional methods now employed.

The program of malaria control on minor impoundages, inaugurated in 1940, was continued and further expanded during 1941. Minor impoundages include all artificial lakes having an area of less than 100 acres. Inspection and supervision of malaria control activities on these are a normal function of the county health departments. Assistance and technical direction is furnished by the State Health Department through personnel of its malaria division and district engineers. Legal enforcement of the regulations is the responsibility of the State Health Department. During the year, forty-one counties were visited by personnel of the State Health Department to assist county sanitation officers in making impounded water inspections. Although approximately fifty per cent of the work that has been performed on minor impoundages since 1927 was accomplished during 1940 and 1941, the program as a whole did not progress during 1941 as had been anticipated. This was due principally to the numerous changes in county sanitation officer personnel during the year. The importance of control and supervision of impoundages, both major and minor, is self-evident when it is realized that approximately one-tenth of the state's population live within the zones affected by these man-made malaria hazards.

The policy adopted in 1940 of making field investigations and preparing a report with reference to malaria transmission for each new military establishment or national defense area located in the state was continued during 1941. Investigations were made and reports prepared for eleven such areas. The reports were transmitted to the responsible federal authorities and pointed out in general the prevalence of malaria and recommendations for its control. Where conditions outside of a reservation presented a malaria hazard to troops or workers within the reservation, plans for drainage units were prepared and submitted for operation under the state-wide WPA malaria control project. Ten such proposed drainage units were submitted. Nine of these were given national defense certification by the U. S. Public Health Service and the Army. Two units had been completed and four were in operation at the close of the year. Where it is felt that the necessary drainage will not be completed prior to the beginning of the 1942 mosquito breeding season, plans are being made to supplement this work with a larvicidal control program. Through the cooperation of the U. S. Public Health Service and the WPA, a larvicidal control program was operated in conjunction with drainage work in one area during the summer of 1941. The importance and effectiveness of malaria control by drainage is apparent from the results obtained at Craig Field, an Air Corps Advanced Flying School near Selma. During November 1940, twenty-five per cent of the command stationed at Craig Field were infected with malaria fever even though, according to the Post Surgeon, every means at his command had been employed to control the disease. A WPA drainage unit for elimination of *Anopheles quadrimaculatus* breeding places in the extra-cantonment area was in-

augurated early in 1941 and completed in September. Approximately 3,000 troops were stationed at the field during 1941, but at the close of the year only five cases of malaria had been reported. In July, the U. S. Public Health Service assigned two engineers to the state to assist in malaria control work in extra-cantonment areas of national defense and military establishments. During the remainder of the year, four additional engineers were assigned to the state for this work. Considerable time was spent in training these men before placing them in the various defense areas. It is estimated that one-third of the malaria division's work during 1941 was in connection with the national defense program. The program will no doubt be further expanded during 1942.

Through a cooperative contract between this department and the Tennessee Valley Authority, 205 houses were screened and mosquito-proofed and maintenance performed on 575 houses previously screened and mosquito-proofed. These houses were located in areas adjacent to Wheeler reservoir where larvicidal operations had failed to secure satisfactory *Anopheles quadrimaculatus* control. The purpose of this work was to provide as much protection as possible to the people residing in the areas and to evaluate this method of malaria control.

Drafting Activities

The drafting room has responded to the increased needs for special drawings incidental to the promotion of national defense activities in the state with the acceleration required for the job to be done. An intensive educational program in sanitation originating in the Bureau of Sanitation and integrated through the county health departments is indicated for the coming year. In this activity the drafting department will participate fully.

DIVISION OF TYPHUS FEVER CONTROL

The number of typhus fever cases reported in the state during 1941 showed a slight increase over that of 1940. The disease was more widely distributed, there being a total of 294 cases from forty-one counties during the year compared with 287 cases from thirty-five counties in 1940.

Eight counties, previously considered typhus free, reported one or more cases during the year, and an increase in the incidence of the disease was noted in fifteen counties; the heaviest incidence, as heretofore, was in the southern part of the state.

No localized outbreak of importance occurred during the year.

On February 28, 1941, WPA participation in all typhus fever control projects was discontinued. All funds for operating since that time have been obtained from local agencies. The work has been carried on by the director of typhus fever control unaided by the personnel which had heretofore functioned.

All properties belonging to WPA or other governmental agencies were stored in Montgomery on orders of the director of the Bureau of Sanitation with the consent of state WPA authorities.

With all federal funds withdrawn it became necessary to devise some method of rodent control which would be effective and more economical. The most effective results had been obtained by laying bait late in the afternoons on weekends. In this way the full effect of poisoning was obtained, and consequently the most satisfactory results. These substitute measures in the absence of sufficient financial aid were continued in order to hold as much of the ground as had been gained over the period of intensive control work. However, in view of the fact that increased numbers of workers on national defense projects and the armed forces of the United States were located in and near areas of known reservoirs of typhus infected rodents, it was felt that a continuation of the control work should be carried on for the protection of these employees of the government as well as the civilian population. Therefore, application for further aid from WPA was made on these grounds. The application was approved by the U. S. Public Health Service, local municipal governments and the State Department of Health, which offered professional, technical and supervisory assistance. Despite this concurrence of approval, the application was rejected by WPA authorities in Washington.

It is the opinion of the department that unless steps are taken to reduce rat population, an increase and a wider distribution in typhus fever will occur in the State.

State and Local Government Cooperation Between March 1 and December 31, 1941

In May the number of cases of the disease being reported began to increase. With the increase in the number of cases the demands for control programs and requests for assistance by municipalities, communities, individuals, and corporations increased. A total of eighteen rat extermination programs were operated in sixteen counties in the State.

The department assisted in obtaining epidemiologic data, ectoparasites, rodents, and other material for use in the poliomyelitis research and investigation made in Walker County and assisted in making epidemiologic investigations of the outbreak of cotton mill fever among mattress workers on WPA relief projects during the year.

A number of conferences were held with state, county, and city governing bodies, and civic and professional groups in an effort to secure funds and as a part of the educational program of the Division of Typhus Fever Control.

Requests for rat-proofing surveys were received, but due to lack of trained supervisory personnel, the department was unable to meet these needs. These requests came from private homes, places of business and municipalities. Several large industries have carried on their own programs under our direction or written recommendations. Requests from several localities in the state came for aid in flea infestations and for methods of extermination of *cimex lectularius* (bed bugs).

DIVISION OF INSPECTION

A larger number than usual of vacancies in county inspection personnel due to resignations,

transfers, and calls to armed service, together with replacement of these with inexperienced personnel placed extra burdens on the staff. Problems arising in areas congested because of defense work also required considerable time.

Eleven counties which had not provided for sanitation officers were not carrying on food control programs. Because of vacancies in inspection personnel in many of the counties for varying periods during the year, it was not feasible to make ratings in every county carrying on food programs. Fifty-one food sanitation ratings were made in forty-six counties during the year.

Food establishment owners reported handicaps from shortage of experienced operators, difficulty in getting new equipment and skilled labor for building or remodeling, as well as delays on delivery of many articles. Certain formerly common materials could not be procured and it was necessary to permit the use of old equipment beyond the period conducive to good sanitation and operation or to accept less satisfactory substitutes. A fairly large percentage of plants and establishments had such volume of business that it interfered with plant sanitation. It was impossible to set definite rules and policies to apply uniformly to all similar plants. Frequently, unavoidable circumstances necessitated deviations from the usual procedure. These in turn contributed to further delays in securing improvement.

The division continued to act as a clearing house for inter-county sale of foods having certified to eighty establishments. Food products plants which regularly sell or truck foods into Alabama from four adjoining states were also inspected occasionally.

The sanitary control of soft drink bottling plants was continued at a satisfactory level. The cooperative work with the Alabama Beverage Commission continued. Fifty-four food establishments, wishing to serve alcoholic beverages, were inspected and certified to the Commission.

Defense Areas

Problems concerning food handling establishments and public housing of workers in certain areas where there was a large increase in population brought about by defense work consumed considerable time. Recommended regulations governing the construction, sanitation and operation of tourist camps, trailer camps and bunkhouses were prepared for local adoption. Fourteen county boards of health adopted these regulations.

Hotels

Nine places discontinued operating as hotels while thirty places were brought into compliance and issued permits during the year.

Milk Control Activities

Numerous conferences and communications were had with various county health departments, milk plant operators, the State Milk Control Board, the Extension Service, the Army and the U. S. Public Health Service regarding the procurement of adequate quantities of graded milk in the areas with most acute shortages. The central office acted as the clearing house for in-

formation regarding the quality of practically all milk shipped inter-county.

Advisory assistance on milk sanitation was rendered to the county health departments in forty-five counties. Late in the year, two members of the staff were assigned largely to milk sanitation work. During the year, nine cities amended their milk regulations to conform to the latest State Board of Health milk regulations. Six county boards of health adopted voluntary milk grading regulations. One of these amended existing regulations; one adopted regulations to partially replace a city milk ordinance which was repealed; and four passed regulations to apply in portions of the county not having city milk regulations.

Seventeen milk sanitation ratings covering twenty-two municipalities were made during the year. In eight of these cities the degree of excellence of enforcement was sufficient to warrant its inclusion by the U. S. Public Health Service on the list of cities with approved milk supplies. Several of the other cities which amended their ordinances during the year started campaigns to improve their milk supply. However, too many city milk supplies remain unsatisfactory from a standpoint of quality.

Milk consumption throughout the state again increased this year. The consumption of pasteurized milk also increased materially in the communities where it was available. Pasteurization plants were installed in three cities where pasteurized milk had not been available. The demand from the public for this product in two of these communities was very gratifying—in fact, to the limit of the supply and capacities of the plants. A number of plants throughout the state report that their sales have been limited by the amount of graded milk which they could secure. The milk shortage which appeared in certain areas last year became general throughout the state during the year 1941. No milk-borne epidemics were reported during the year. However, the number of cases of undulant fever reported from certain cities was sufficient to be of concern.

Shellfish Sanitation

The shellfish sanitation programs were continued. Practically all of the remaining shellfish plants not rebuilt or remodeled last year were modernized this year. Shrimp cooking and peeling was done more extensively this year than in the past. A sanitary survey and bacteriological study of the Bon Secour River and Bay was made late in the year. Plans were laid for sanitation improvements along the shore of this oyster growing body of water.

Miscellaneous Activities

Work was continued with the Council of Coordinating Agencies for School Lunchrooms. Floor plans for a large and small school lunchroom kitchen showing needed equipment and its arrangement were prepared. These were approved by the Council and the State Department of Education.

Instruction on inspection work was given four classes of sanitation trainees at the Field Training Station in Opelika.

Talks were made or papers read before five state association or occupational groups.

Cooperation with the U. S. Public Health Service and U. S. Food and Drug Administration for certain establishments coming under their jurisdiction was continued.

BUREAU OF MATERNAL AND CHILD HEALTH

In November 1941 when the Division of Nursing was transferred to the Bureau of County Health Work, this bureau took on its new name, the Bureau of Maternal and Child Health. It was a progressive move made to better correlate and integrate the services of the advisory personnel with the county work.

Probably the most forward step was the creation of the Division of Mental Hygiene, the need of which has been recognized for some time.

The members of the bureau have continued their specialistic services. They have cooperated with all the other bureaus and county health departments in order that the consultant and advisory service may be more valuable and helpful.

As indicated in the activities of the separate divisions, the importance of education is recognized. The personnel has carried on a continuous program of activities in this field throughout the year.

Conditions in defense areas have accentuated existing problems of maternal and child care and brought new ones. To meet these, additional staff personnel is indicated, especially in the Divisions of Child Hygiene and Dental Hygiene.

DIVISION OF CHILD HYGIENE

While recognizing the many things to be done, the pediatricians of the staff have concentrated mainly on two objectives: (a) to help decrease the number of preventable deaths of all children, paying particular attention to our infant mortality rate which is 31% higher than that for the United States as a whole, and (b) to help improve the general health of all boys and girls.

A definite program of education has been carried on through talks, individual conferences, and consultations with physicians.

They act in an advisory capacity and supervise the technique and conduct of the child health conferences.

The pediatrician spent six weeks in Walker County during the epidemic of infantile paralysis. The time was spent in consultations and assisting in the diagnosis of cases. A more comprehensive study is being made as to possible sources of spread of the disease.

A study of the chief causes of death through a five-year period was made. It was learned that over one thousand babies are dying every year in Alabama whose death is attributed to prematurity. This has lead to plans for more intensive work to provide adequate care for the premature infants. At present there are not enough hospital beds or approved types of incubators.

There are forty-seven child health conferences conducted in twenty-five counties by private physicians and twenty-four conducted by county health officers. This represents an increase of twenty-seven conferences.

In 1941 nine physicians of the state were sent to the Southern Pediatric Seminar at Saluda, North Carolina for refresher courses in pediatrics.

A survey was made to determine to what extent the defense program in certain areas was affecting child care. Reports from these areas indicate an intensification of existing problems of child care and health as well as many new problems. Participation will be had with the Department of Public Welfare for the day care of children.

Nutrition

In applying the science of nutrition to the betterment and well-being of the people the specialized activities have been integrated into the general public health program.

The major importance of school lunches has been recognized and the nutritionist has contributed her services.

Emphasis has been placed on programs adapted to local conditions. This is (1) by direct service, individual instruction, and home visits; (2) education activities by material prepared for the use of teachers, nurses, lunchroom workers, mothers and for general distribution; and (3) instructions in organizing classes of adults. There has been direct cooperation with other agencies.

The staff nutritionist is a member of the State Nutrition Committee and has attended all the meetings.

As one nutritionist working in a state the size of Alabama with its many nutrition problems it is recognized that efforts should be concentrated on staff education and consultations, on making available simple nutrition literature, and in using local sources for the promotion of better nutrition service.

DIVISION OF DENTAL HYGIENE

Though there was an interruption in personnel and the loss of the dental hygienist, the service has markedly expanded under the two dental advisors.

Educational programs have been conducted and new dental clinics established. Prior to 1940, three counties had dental clinics. Five new counties began in 1940 and seven new counties in 1941. Two counties operate Negro clinics.

The program is one of prevention and corrective dentistry through clinics conducted by the local dentists. The effort is made to accept first the preschool and first grade children and continue until all needed work is completed. The standard of technique is high and is maintained.

A total of 3,008 patients were admitted to the clinic and 1,772 had the dental work completed. The operations (9,156 in number, white, and 2,667, colored) consist of amalgam, cement, and porcelain fillings; extractions; and gum treatments. The cost per operation was forty-eight cents for the white and fifty-six cents for the colored.

There is a decided increase in interest in the corrective program as shown by the demand and the apparent ease with which local funds are raised. Additional staff personnel is needed.

The associate in charge of the Division of Dental Hygiene attended the University of Michigan for one semester.

DIVISION OF MENTAL HYGIENE

The Division was created in March, 1941 and marked a very progressive step. Projected plans call for a psychiatrist, a psychiatric social worker and a psychologist. We have the first two.

The purpose of creating such a unit is to attempt to prevent mental disorders that cause so many children to become maladjusted.

Though the need is recognized, the program is in its infancy and progress will be slow.

Child guidance clinics are held in several counties and many cases are seen. Some have been improved.

The types of cases seen are: mental deficiency, stealing, causing disturbances at school, vocational problems, runaways, and sex delinquency.

There is noticed a hesitancy to seek these services on the part of the parents, teachers, and juvenile courts. On the other hand, the workers of the welfare department make frequent referrals. The mental hygiene program needs to be further organized and expanded.

DIVISION OF MATERNAL HYGIENE

There were several changes in the personnel of the division during the year. The present associate in charge became associated in July, 1941.

Seven counties started maternity clinics and one county dropped its clinics, making a net increase of six counties with a total of forty-nine clinics and 106 centers.

The number of clinic sessions increased 38% to 3,097 and the number of patient visits increased 45% to 39,449.

The emphasis has been shifted during 1941 from the obtaining of more clinics to the improvement of the obstetric care given in them. Each of the three consultants has been assigned a definite part of the state conforming to the health districts.

A total of 1,672 blood tests were made, representing 92% of the antepartum cases admitted. Thirteen and five-tenths per cent of these were positive for syphilis (white—2% and colored—16.5%). Eighty per cent of all those affected were treated and received an average of twelve treatments each.

Preliminary estimates for forty-eight counties holding prenatal clinics show that the maternal mortality rates are definitely decreased for 1941. The rate is even lower in those attending clinics.

Baby Spacing

The work of baby spacing has progressed satisfactorily. The program was presented to twenty-six county medical societies and twenty counties now have clinics giving this information, an increase of fourteen counties over 1940. An estimated number of 1,200 patients have received this service.

Cullman County Maternity Service

This service has continued to improve. Five public health nurses are employed and a satisfactory program, combining this specialized service with the generalized public health program, has been carried out.

There were 290 maternity cases registered in 1941, representing about 30% of the total births

of the county. The quality of the nurses' services has been improved. Hospital deliveries increased to 158 in 1941, an increase of 38 over 1940. A new hospital partly accounts for this. During the same period, midwife deliveries decreased from 17% to 10%.

Slossfield Maternity Service

This maternity service for colored women was started in Jefferson County in July 1940 and has steadily improved in volume and type of service.

In 1941 there were 429 patients delivered, an increase of 309 over 1940. Of these, 247 were in the home and 182 in the hospital. There were no maternal deaths among these delivered at Slossfield. Only patients who register before the seventh month of pregnancy are accepted by the maternity service.

Tuskegee School for Training Nurses in Midwifery

This school was started in the autumn of 1941 and is a development of the nurse midwife delivery service already functioning in Macon County. The Tuskegee Institute provides a building on the campus. A white nurse midwife instructor, loaned from Lobenstine, inaugurated the school. There are at present three colored student nurses midwives. They expect to graduate in March 1942 after six months of training in midwifery.

During the short time this project has been under way, the number of "granny midwives" has been reduced from 120 to 27. In 1941 the nurse midwives delivered 177 of the 722 deliveries in Macon County.

Midwife Control

The advisor in midwife control has made 54 visits to 38 counties and reports 2,280 registered and 622 non-registered midwives. These were supervised by office, home, and club visits—a total of 8,583 visits by county health nurses. The percentage of deliveries by midwives in 1941 was 32.6, a decrease of 1.4% over 1940.

Fellowships in Public Health Obstetrics

In August 1941 the Children's Bureau set up two fellowships a year in public health obstetrics for obstetricians to learn about the various phases of state maternal and child health programs.

Three courses are offered: (1) the one-year fellowship; (2) the three months' orientation course for obstetric consultants from other state health departments; and (3) the three months' field observation course for obstetricians in training.

Considerable publicity has been given to the course through announcements in various medical journals. Thirteen applications have been received. One obstetric consultant has taken the shorter orientation course. One scholarship has been awarded effective March 1, 1942.

Prevention of Cancer

The associate in charge of the Division of Maternal Hygiene has continued to serve as secretary of the Association's Committee on Prevention of Cancer. He has continued the work with the Women's Field Army.

BUREAU OF VITAL STATISTICS

The figures presented herewith are provisional and, as such, are subject to revision when the final tabulations for 1941 are made. In making comparisons, provisional figures for previous years were used.

Births: Births in Alabama in 1941 numbered 64,047; the provisional rate (22.4 per 1,000 population) has been exceeded only once during the preceding quinquennium (1936-1940), that is 1938 (22.5).

Stillbirths: Stillbirths recorded in Alabama totalled 2,503; the provisional rate (37.6 per 1,000 total births) was well below the mean rate (40.9) for the five-year period, 1936-1940.

Deaths: There were 28,767 deaths reported; the provisional rate (10.1 per 1,000 population) was lower than the corresponding rates for each of the preceding five years.

Although increases were noted in deaths from certain causes, these were more than offset by decreases in other causes. With the exception of deaths from childhood diseases, the picture may be said to have been favorable.

Infant Deaths: Deaths of infants under one year of age numbered 3,757; the provisional death rate (58.7 per 1,000 live births) marked a 5.8 per cent decrease from the corresponding rate for the previous year (62.3) and was less than the mean rate (62.6) for the quadrennium, 1936-1939.

Deaths from Childhood Diseases: In general, the death rates from this group of diseases were higher than they were in 1940. This was true of the rates for whooping cough (4.7 per 100,000 population), diphtheria (2.4), measles (3.6) and poliomyelitis (2.3). The rate for scarlet fever (0.4) equalled the rate for the preceding year, while diarrhea and enteritis, with a rate of 12.4, were only slightly below the 1940 rate (12.5).

Deaths from Other Important Causes: Death rates lower than those recorded during any single year of the five-year period, 1936-1940, were attained by a number of causes; namely, typhoid fever, with a rate of 0.8 per 100,000 population; tuberculosis, all forms (51.6); malaria (4.2); pellagra (6.1); bronchitis (1.3); pneumonia (53.8); appendicitis (8.7); suicide (6.1), homicide (14.9), and diseases of the puerperal state (50.3 per 10,000 total births). Due to a revision of the International List of Causes of Death, the death rates for certain causes are not strictly comparable with the provisional rates for years prior to 1940. In each instance, the rate for these diseases, namely, syphilis (17.9), diseases of the heart (176.8) and nephritis (84.8) were less than the corresponding figures for 1940. The rate for cancer (63.2) while lower than the rate for 1940 (64.4) exceeded those recorded for each of the preceding four years, 1936-1939. Increases were noted in the rates for influenza (34.2), diabetes (12.1), intracranial lesions (83.9) and motor vehicle accidents (26.8).

More than 65,000 parents were notified by the Bureau of Vital Statistics during 1941 that the certificate of birth of their child had been received and placed on file. This notice, called a Notification of Birth Registration, is usually

mailed within three months of the date of birth.

As was expected, the demand for copies of certificates continued the rapid upward trend begun in 1940. The bureau issued 26,857 certified copies in 1941, an increase of more than 100 per cent above the record number (10,853) issued in 1940. As in past years, uncertified copies were requested much more often than certified copies. A large increase was noted in the requests for this type of copy. Of the uncertified copies issued, 34,414 were for family records; 7,555 for school entrance purposes; 6,678 for verification of age for employment; 2,822 for welfare purposes; and 2,217 for enlistment in the army or navy.

Each year a large number of searches must be made in connection with several phases of the work; namely, in fulfilling requests for both certified and uncertified copies of certificates, in follow-up work in checking registration, in making corrections on certificates, and in filing delayed certificates. These searches numbered 155,579 in 1941.

Since many of the certificates were received incomplete or obviously in error, it was necessary to secure their completion or information which would enable the bureau to make the correction by questionnaire. Queries mailed during the year totalled 31,490. Two or three queries were sent on some certificates. In 1941, 38,545 additions or corrections were made on certificates, exceeding the number made during the previous year (26,244). These corrections were made from the returned queries, from corrected notifications sent back to this office, and from affidavits secured by persons in order to correct statements that were incorrect on the original certificate.

In accordance with the laws concerning adoptions, a copy of each decree of adoption granted in the probate courts was sent to the Bureau of Vital Statistics. A new birth certificate in the name of the adopting parents was prepared for each case and substituted for the old one, as required by law. There were 219 substitutions made during 1941.

Original certificates of birth, death, stillbirth, marriage, and reports of divorce are received monthly. These are systematically arranged, numbered, and bound in volumes for permanent preservation. Nearly 132,000 records were received in 1941. Each month an index was prepared for births and deaths for use in locating records.

For statistical purposes, much of the information contained on the various types of certificates was coded and transferred to tabulation cards. Tabulation from these cards form the basis of the Monthly Bulletin of Vital Statistics and for the Annual Report Relating to the Registration of Births, Stillbirths, Deaths, Marriages, and Divorces, as well as for special studies made throughout the year.

As in past years, statistical data from communicable disease and venereal disease reports received from physicians by the Bureau of Preventable Diseases were transcribed to punch cards. Approximately 30,000 of these cards were tabulated and a report made to the above bureau. In addition to the routine venereal disease work, the intensive venereal disease control pro-

gram begun in 1940, in cooperation with the United States Public Health Service, was continued. In carrying on this project, it is estimated that about 1,000,000 records were transcribed to punch cards and the data thereon tabulated. Again, data obtained from dental examinations of school children was transcribed and tabulated on about 20,000 records for the Division of Oral Hygiene of the Bureau of Maternal and Child Hygiene. Data on about 65,000 cards were transcribed and tabulated for the Bureau of County Health work.

The statistical division answered requests for information relating to vital statistics, performed routine duties including population estimates, preparation of codes, compilation of historical data and the computation of rates for the monthly vital statistics bulletin. It also supervised the preparation of tabular material and analyzed the data for use in the annual report of the bureau.

Part III of the Board's report was adopted, as was the report as a whole.

REVISION OF THE ROLLS

The next order of business being the revision of the rolls of the Association, the Secretary was directed by President Mason to proceed without interruption in the absence of objection. As a preface to the revision of the Roll of County Societies, the Secretary said:

"County Medical Societies, to comply with the Constitution, must meet certain obligations. First, an annual report, on forms furnished by the Association, must be filed with the Secretary; second, each society is expected to be represented at the annual meeting by at least one delegate; and, third, dues are to be remitted for each member not exempt from payment of dues."

With this foreword, the revision proceeded.

1. Revision of the Roll of County Societies:

(a) County societies which have fulfilled all their constitutional obligations: Autauga, Baldwin, Barbour, Bibb, Blount, Bullock, Butler, Calhoun, Chambers, Cherokee, Chilton, Choctaw, Clarke, Clay, Coffee, Colbert, Conecuh, Coosa, Covington, Crenshaw, Cullman, Dale, Dallas, DeKalb, Elmore, Escambia, Etowah, Fayette, Franklin, Geneva, Hale, Houston, Jackson, Jefferson, Lamar, Lauderdale, Lee, Limestone, Lownes, Macon, Madison, Marengo, Marion, Marshall, Mobile, Monroe, Montgomery Morgan, Perry, Pike, Randolph, Shelby, St. Clair, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, Washington, Wilcox, Winston—Total 61.

No objection being made as to the correctness of this report, the President directed that these societies be passed as clear on the books.

(b) County societies partially delinquent: In that they are not represented by delegates at this

meeting of the Association—Cleburne, Geneva, Henry, Lawrence and Pickens. Green County has not submitted its annual report.

No objection being offered as to the correctness of this report, the President directed that these societies be passed, with the understanding that the Secretary-Treasurer make an effort to remove the delinquencies, as far as possible.

County Societies totally delinquent: None.

Thereupon the Secretary said: "In revising the Roll of the College of Counsellors, five lists are prepared, designated respectively: (1) the schedule of counsellors clear on the books in regard to attendance and dues; (2) the schedule of delinquent counsellors—counsellors delinquent in attendance or dues, or against whom charges may be pending; (3) the schedule of miscellaneous counsellors—counsellors who have died since the last annual meeting, or have offered their resignation, or have moved out of the State, or out of their respective congressional districts; (4) the schedule of active counsellors of twenty years' standing, and (5) the schedule of counsellors-elect who have qualified as provided in the Constitution."

With such preface, the revision was continued.

2. Revision of the Roll of Counsellors:

(a) Counsellors clear on the books: Abbott, Acker, C. T., and P. J. M., Alison, Anderson, Bedsole, Belue, Boyd, Brown, Brunson, Cannon, Carter, Chenault, Cocke, Collier, Craddock, Dabney, Daves, Davis, Dowling, Eskew, Ford, Garber, Gibson, Graham, Granger, Gresham, Grote, Hagood, Hatchett, Hill, R. C., R. L., and R. Lee; Hodges, Howell, Hubbard, Isbell, Jackson, Killian, Killingsworth, King, Laslie, Ledbetter, Lester, Lewis, Martin, Mason, McCall, McCaslan, Moore, C. W. C., and D. S., Morgan, Noland, Oswald, Parker, Perdue, Pickell, Redden, Riser, Rucker, Salter, Scarbrough, Scott, Searcy, Sewell, Sherrill, Shropshire, Simpson, Skinner, Sledge, Smith, G. R., J. P., and M. E., Stabler, Stallworth, Tankersley, Taylor, Thacker, Tillman, Waldrop, Walker, Walls, Walsh, Waters, Watson, Weil, Welch, Weldon, White, Wood, Woodruff, Wright.

In the absence of objection, the President ordered passed the names of these counsellors reported as clear on the books:

(b) Delinquent Counsellors: None.

(c) Miscellaneous Counsellors:

(1) Life Counsellors who have died: J. N. Baker.

(2) Active Counsellors who have died: F. L. Abernethy.

(3) Active Counsellors who have moved: None.

(4) Active Counsellors who have resigned: None.

(5) Active Counsellors of twenty years' standing: J. G. Bedsole, J. D. Dowling, E. W. Rucker, W. F. Scott, E. S. Sledge and R. W. Waldrop.

(6) Counsellors-Elect who have properly qualified: B. F. Austin, J. C. Bragg, R. E. Cloud, C. T. Jones, W. J. B. Owings, A. M. Roan and M. S. Whiteside.

The President directed that the names of the deceased counsellors be transferred to the Book of the Dead; that Drs. J. G. Bedsole, J. D. Dowling, E. W. Rucker, W. F. Scott, E. S. Sledge and R. W. Waldrop be transferred to the Roll of Life Counsellors; and that to the Roll of Active Counsellors be added Drs. B. F. Austin, J. C. Bragg, R. E. Cloud, C. T. Jones, W. J. B. Owings, A. M. Roan and M. S. Whiteside.

3. Revision of the Roll of Correspondents:

Dr. Harvey B. Stone, the 1942 Jerome Cochran Lecturer, was added to the Roll of Correspondents.

4. Revision of the Roll of Officers:

Dr. Harvey B. Searcy, Tuscaloosa, was elected President; Dr. J. O. Morgan, Gadsden, vice-president of the Northeastern Division; and Drs. Brannon Hubbard and W. D. Partlow, Censors for five years.

Committees constitutionally provided to nominate counsellors brought in the following nominations: 1st District—Drs. W. J. Barber, G. O. Segrest, J. M. Weldon, and A. L. White; 2nd—Douglas L. Cannon and C. G. Godard; 3rd—F. G. Granger, V. J. Thacker and J. S. Tillman; 4th—James Tankersley; 5th—W. H. Riser and B. C. Scarbrough; 8th—E. M. Chenault and Rayford Hodges; and 9th—C. N. Carraway, H. Earle Conwell, S. L. Ledbetter, Jr., John W. Simpson and Frank C. Wilson.

The ballot of the Association was cast for these nominees by the Secretary.

Miscellaneous Business

The Association adopted a resolution introduced by Dr. K. A. Mayer of Lower Peachtree expressing its gratitude for the many courtesies shown it during the session.

On invitation extended by Dr. D. F. Talley, Birmingham was chosen as the 1943 meeting place.

President Searcy and other newly chosen officers were presented, whereupon the Association was declared adjourned.

THE ROLL OF COUNSELLORS
REVISION OF 1941

LIFE COUNSELLORS

Name and Address	Date of Election
Alison, Samuel Blakemore, Minter (4)	1919
Andrews, Glenn, Montgomery (2)	1893
Ashcraft, Virgil Lee, Reform (7)	1919
Bedsole, James G., Jackson (1)	1922
Bondurant, Eugene DuBose, Mobile (1)	1894
Burdeshaw, Shelby L., Headland (3)	1921
Caldwell, Edwin Valdivia, Huntsville (8)	1918
Chenault, Frank L., Decatur (8)	1917
Crutcher, John Sims, Athens (8)	1915
Cunningham, William Moody, Jasper (7)	1912
Davie, Mercer Stillwell, Dothan (3)	1904
Dowling, Judson D., Birmingham (9)	1922
Faulk, William M., Tuscaloosa (6)	1913
Gordon, Samuel A., Marion (6)	1913
Gragg, Vincent J., Clanton (6)	1921
Gresham, George L., Andalusia (2)	1913
Guice, Charles Lee, Gadsden (5)	1899
Harris, Seale, Birmingham (9)	1903
Harrison, William Groce, Birmingham (9)	1896
Hayes, Charles Philips, Elba (3)	1920
Hayes, Julius Pope, Clanton (6)	1920
Heacock, Jos. D., Birmingham (9)	1912
Heflin, Wyatt, Birmingham (9)	1893
Hill, Luther Leonidas, Montgomery (2)	1888
Hill, Robert Somerville, Montgomery (2)	1898
Howell, William Edward, Haleyville (7)	1918
Howle, James Augustus, Hartselle (8)	1895
Jackson, Alva A., Florence (8)	1918
James, Norman G., Hayneville (2)	1921
Leach, Sydney, Tuscaloosa (6)	1920
Lightfoot, Phillip Malcolm, Shorter (3)	1918
Long, Clarence, Hurtsboro (3)	1920
Lull, Cabot, Birmingham (9)	1919
Lupton, Frank A., Birmingham (9)	1913
Martin, James Cordie, Cullman (7)	1917
Mason, James Monroe, Birmingham (9)	1918
Mayer, Kossuth Aaron, Lower Peach Tree (1)	1919
McAdory, Edward Dudley, Cullman (7)	1920
McCain, William Jasper, Livingston (6)	1898
McLeod, John Calvin, Bay Minette (2)	1911
McLester, James Somerville, Birmingham (9)	1913
Mohr, Chas. A., Mobile (1)	1909
Partlow, William Dempsey, Tuscaloosa (6)	1909
Price, Albert Bascom, Gordo (7)	1919
Prince, Edward Mortimer, Birmingham (9)	1909
Ralls, Arthur W., Gadsden (5)	1919
Rucker, Edmon W., Birmingham (9)	1922
Sankey, Howard J., Nauvoo (7)	1914
Scott, Walter F., Birmingham (9)	1922
Sledge, Edward S., Mobile (1)	1922
Smith, Russell Aubrey, Brewton (2)	1918
Speir, Phillip V., Greenville (2)	1917
Talley, Dyer Findley, Birmingham (9)	1902
Thigpen, Charles Alston, Montgomery (2)	1900
Thomas, Eugene Marvin, Prattville (4)	1920
Waldrop, R. W., Bessemer (9)	1922
Ward, Henry Silas, Birmingham (9)	1915
Wilkerson, Fred Wooten, Montgomery (2)	1919
Wilkinson, David Leonidas, Birmingham (9)	1902
Total 59	

ACTIVE COUNSELLORS

Those marked with a † are serving last terms of six years.

Those marked with an asterisk (*) are serving second terms of seven years.

Those without a symbol are serving first terms of seven years.

The numeral is the number of the congressional district.

	Date of Elec- Expi- tion ration
Abbott, Chas. E., Tuscaloosa (6)	1938 to 1945
Acker, Charles T., Montevallo (6)	1937 to 1944
Acker, Paul Jerome Morris, Mobile (1)	†1937 to 1943
Alison, James F., Selma (4)	*1941 to 1948
Anderson, Thos. J., Greensboro (6)	*1940 to 1947
Austin, Burton F., Montgomery (2)	1941 to 1948
Belue, Julius O., Athens (8)	1937 to 1944
Boyd, Frank H., Opelika (3)	1939 to 1946
Bragg, John C., Decatur (8)	1941 to 1948
Brown, Elridge T., Cleveland (7)	1937 to 1944
Brunson, Emmett T., Samson (3)	1936 to 1943
Cannon, Douglas L., Montgomery (2)	†1942 to 1948
Carter, William R., Repton (2)	*1941 to 1948
Chenault, Erskine M., Decatur (8)	*1942 to 1949
Cloud, Robert E., Ensley (9)	1941 to 1948
Cocke, William T., Demopolis (1)	1939 to 1946
Collier, James P., Tuscaloosa (6)	1940 to 1947
Craddock, French H., Sylacauga (4)	*1939 to 1946
Dabney, Marye Y., Birmingham (9)	†1937 to 1943
Daves, James G., Cullman (7)	1938 to 1945
Davis, Lewis C., Gordo (7)	1939 to 1946
Eskew, M. H., Uniontown (6)	*1941 to 1948
Ford, Charles E., Roanoke (5)	1939 to 1946
Garber, James R., Birmingham (9)	*1939 to 1946
Gibson, Edward Lee, Enterprise (3)	1940 to 1947
Graham, Geo. S., Birmingham (9)*	1936 to 1943
Granger, F. G., Ashford (3)	†1942 to 1948
Gresham, Walter A., Russellville (7)	*1940 to 1947
Grote, Carl A., Huntsville (8)	1937 to 1944
Hagood, M. H., Brewton (2)	†1938 to 1944
Hatchett, Wm. C., Huntsville (8)	*1936 to 1943
Hill, Robert C., York (6)	1936 to 1943
Hill, Robert L., Winfield (7)	†1938 to 1944
Hill, R. Lee, Haleyville (7)	1939 to 1946
Hodges, Rayford, Scottsboro (8)	*1942 to 1949
Howell, John V., Marion (6)	1936 to 1943
Hubbard, T. Brannon, Montgomery (2)	†1938 to 1944
Isbell, Arthur L., Albertville (5)	1940 to 1947
Jackson, Albert Chas., Jasper (7)	1940 to 1947
Jones, Carl T., Newville (3)	1941 to 1948
Killian, Claud D., Ft. Payne (5)	1940 to 1947
Killingsworth, Noah W., Brundidge (2)	1939 to 1946
King, Chas. O., Birmingham (9)	1938 to 1945
Laslie, Carney G., Montgomery (2)	1939 to 1946
Ledbetter, Samuel L., Jr., Birmingham (9)	*1942 to 1949
Lester, Belford S., Birmingham (9)	†1937 to 1943
Lewis, Walter A., Enterprise (3)	*1940 to 1947
Martin, John A., Montgomery (2)	*1940 to 1947
Mason, E. M., Birmingham (9)	†1938 to 1944
McCall, Daniel T., Mobile (1)	†1937 to 1943
McCaslan, W. Hill, Union Springs (3)	1940 to 1947
Moore, C. W. C., Talladega (4)	1937 to 1944
Moore, David S., Jr., Birmingham (9)	*1939 to 1946
Morgan, J. Orville, Gadsden (5)	1939 to 1946
Noland, Lloyd, Fairfield (9)	*1936 to 1943
Oswalt, G. G., Mobile (1)	*1936 to 1943
Owings, W. J. B., Brent (6)	1941 to 1948
Parker, Lorenzo D., Andalusia (2)	*1940 to 1947
Perdue, James D., Mobile (1)	*1940 to 1947
Pickell, Frank W., Brewton (2)	1938 to 1945
Redden, Raymond Hollis, Sulligent (7)	†1940 to 1946
Riser, William H., Lafayette (5)	*1942 to 1949
Roan, Avery M., Decatur (8)	1941 to 1948
Salter, Wilbur M., Anniston (4)	*1941 to 1948
Scarbrough, B. C., Albertville (5)	*1942 to 1949
Searcy, Harvey Brown, Tuscaloosa (6)	†1937 to 1943
Sewell, John Ferris, Wetumpka (4)	1940 to 1947
Sherrill, John D., Birmingham (9)	1939 to 1946
Shropshire, Courtney William, B'ham (9)	†1937 to 1943
Simpson, Harry M., Florence (8)	1938 to 1945

*Deceased.

ACTIVE COUNSELLORS—Continued		Date of
		Elec- Expi- tion ration
Skinner, Marcus, Selma (4)		1939 to 1946
Smith, Gordon R., Ozark (3)		*1941 to 1948
Smith, Joe P., Eutaw (6)		1940 to 1947
Smith, Merle E., Parrish (7)		1938 to 1945
Stabler, Lorenzo V., Greenville (2)		1937 to 1944
Stallworth, William A., Frisco City (1)		1937 to 1944
Tankersley, James, Prattville (4)		†1942 to 1948
Taylor, Woodie R., Town Creek (8)		†1939 to 1945
Thacker, Vincent J., Dothan (3)		*1942 to 1949
Tillman, John S., Clio (3)		*1942 to 1949
Walker, Alfred A., Birmingham (9)		†1937 to 1943
Walls, J. J., Alexander City (5)		†1938 to 1944
Walsh, Groesbeck, Fairfield (9)		*1940 to 1947
Waters, Hinton W., Opp (2)		1939 to 1946
Watson, Jerre, Anniston (4)		1938 to 1945
Weil, Clarence K., Montgomery (2)		1937 to 1944
Welch, Stewart, Birmingham (9)		*1941 to 1948
Weldon, Joseph M., Mobile (1)		*1942 to 1949
White, Alexander L., Thomasville (1)		†1942 to 1948
Whiteside, Maurice S., Cullman (7)		1941 to 1948
Wood, Wiley D., Camp Hill (5)		*1940 to 1947
Woodruff, Gerald G., Anniston (4)		1940 to 1947
Wright, David H., Berry (7)		*1939 to 1946
Total 93		

COUNSELLORS-ELECT		
Barber, William J., Butler (1)		1942 to 1949
Carraway, Chas. Newton, Birmingham (9)		1942 to 1949
Conwell, H. Earle, Birmingham (9)		1942 to 1949
Godard, Claud G., Fairhope (2)		1942 to 1949
Segrest, Grady O., Mobile (1)		1942 to 1949
Simpson, John W., Birmingham (9)		1942 to 1949
Wilson, Frank C., Birmingham (9)		1942 to 1949
Total 7		

THE ROLL OF THE COLLEGE OF COUNSELLORS BY CONGRESSIONAL DISTRICTS

On this roll the names of the Counsellors are given by Congressional Districts. It is intended to serve as a guide in the election of new Counsellors, with a view to the distribution of them in approximate proportion to the number of members in the several districts. It is not considered to be good policy, and it is not considered to be fair and right, to give a few large towns greatly more than their pro rata share of Counsellors. The calculations are based on the nearest whole number. On April 1, 1942, there were 1,576 members in the County Medical Societies. That would give one Counsellor to every 16 members. The membership set forth in the following is that of April 1.

FIRST DISTRICT		
<i>Names of Counsellors</i> —W. T. Cocke, Marengo; W. J. Barber, Choctaw; A. L. White, Clarke; E. S. Sledge, P. J. M. Acker, D. T. McCall, G. G. Oswalt, G. O. Segrest, J. M. Weldon and J. D. Perdue, Mobile; W. A. Stallworth, Monroe.		

County	Members	Counsellors
Choctaw	6	1
Clarke	14	1
Marengo	14	1
Mobile	103	6
Monroe	13	1
Washington	4	0
Wilcox	11	0
	165	10

SECOND DISTRICT		
<i>Names of Counsellors</i> —C. G. Godard, Baldwin; L. V. Stabler, Butler; W. R. Carter, Conecuh; L. D. Parker and H. W. Waters, Covington; M. H. Hagood and F. W. Pickell, Escambia; T. B. Hubbard, C. G. Laslie, J. A. Martin, C. K. Weil, Douglas L. Cannon and B. F. Austin, Montgomery; and N. W. Killingsworth, Pike.		

County	Members	Counsellors
Baldwin	10	1
Butler	14	1
Conecuh	8	1
Covington	20	2
Crenshaw	9	0
Escambia	16	2
Lowndes	6	0
Montgomery	95	6
Pike	18	1
	196	14

THIRD DISTRICT		
<i>Names of Counsellors</i> —J. S. Tillman, Barbour; W. H. McCaslan, Bullock; E. L. Gibson and W. A. Lewis, Coffee; G. R. Smith, Dale; E. T. Brunson, Geneva; C. T. Jones, Henry; V. J. Thacker and F. G. Granger, Houston; and F. H. Boyd, Lee.		

County	Members	Counsellors
Barbour	15	1
Bullock	8	1
Coffee	15	2
Dale	10	1
Geneva	17	1
Henry	10	1
Houston	28	2
Lee	21	1
Macon	8	0
Russell	5	0
	137	10

FOURTH DISTRICT		
<i>Names of Counsellors</i> —James Tankersley, Autauga; W. M. Salter, Jerre Watson and G. G. Woodruff, Calhoun; J. F. Alison and Marcus Skinner, Dallas; J. F. Sewell, Elmore; and French Craddock and C. W. C. Moore, Talladega.		

County	Members	Counsellors
Autauga	7	1
Calhoun	39	3
Clay	7	0
Coosa	3	0
Dallas	35	2
Elmore	13	1
St. Clair	12	0
Talladega	22	2
	138	9

FIFTH DISTRICT		
<i>Names of Counsellors</i> —W. H. Riser, Chambers; C. D. Killian, DeKalb; J. O. Morgan, Etowah; A. L. Isbell and B. C. Scarbrough, Marshall; C. E. Ford, Randolph; and J. J. Walls and W. D. Wood, Tallapoosa.		

County	Members	Counsellors
Chambers	15	1
Cherokee	2	0
Cleburne	4	0

DeKalb	16	1
Etowah	55	1
Marshall	19	2
Randolph	13	1
Tallapoosa	17	2
	141	8

SIXTH DISTRICT

Names of Counsellors—W. J. B. Owings, Bibb; J. P. Smith, Greene; T. J. Anderson, Hale; M. H. Eskew and J. V. Howell, Perry; C. T. Acker, Shelby; R. C. Hill, Sumter; and J. P. Collier, H. B. Searcy and C. E. Abbott, Tuscaloosa.

County	Members	Counsellors
Bibb	10	1
Chilton	13	0
Greene	6	1
Hale	7	1
Perry	11	2
Shelby	18	1
Sumter	14	1
Tuscaloosa	51	3
	130	10

SEVENTH DISTRICT

Names of Counsellors—E. T. Brown, Blount; J. G. Daves and M. S. Whiteside, Cullman; D. H. Wright, Fayette; W. A. Gresham, Franklin; R. H. Redden, Lamar; Robert L. Hill, Marion; L. C. Davis, Pickens; A. C. Jackson and M. E. Smith, Walker; and R. Lee Hill, Winston.

County	Members	Counsellors
Blount	12	1
Cullman	17	2
Fayette	9	1
Franklin	15	1
Lamar	12	1
Marion	12	1
Pickens	15	1
Walker	32	2
Winston	10	1
	134	11

EIGHTH DISTRICT

Names of Counsellors—Rayford Hodges, Jackson; H. M. Simpson, Lauderdale; W. R. Taylor, Lawrence; J. O. Belue, Limestone; W. C. Hatchett and C. A. Grote, Madison; and E. M. Chenault, J. C. Bragg and A. M. Roan, Morgan.

County	Members	Counsellors
Colbert	17	0
Jackson	14	1
Lauderdale	23	1
Lawrence	8	1
Limestone	17	1
Madison	26	2
Morgan	22	3
	127	9

NINTH DISTRICT

Names of Counsellors—G. S. Graham,* S. H. Welch, J. D. Sherrill, M. Y. Dabney, B. S. Lester, C. W. Shropshire, Alfred A. Walker, E. M. Mason, Lloyd Noland, J. R. Garber, D. S. Moore, Jr.,

*Deceased.

Groesbeck Walsh, C. O. King, S. L. Ledbetter, Jr., R. E. Cloud, C. N. Carraway, H. Earle Conwell, J. W. Simpson and F. C. Wilson.

County	Members	Counsellors
Jefferson	408	19

THE ROLL OF CORRESPONDENTS

“Distinguished members of the medical profession residing outside of the State, and Counsellors of the Association, who after not less than ten years of faithful service may have resigned their counsellorships, shall be eligible for election as Correspondents.

“Correspondents shall have the privilege of transmitting or presenting to the Association such communications, or scientific essays, as they may deem proper.”—*From the Constitution.*

Name and Address	Date of Election
Andrew J. Coley, Oklahoma City.....	1909
W. S. Thayer, Baltimore.....	1921
Lewellys F. Barker, Baltimore.....	1921
Rudolph Matas, New Orleans.....	1921
John B. Elliott, Jr., New Orleans.....	1921
Howard A. Kelly, Baltimore.....	1921
George W. Crile, Cleveland, Ohio.....	1921
Henry A. Christian, Boston.....	1921
H. A. Royster, Raleigh, N. C.....	1926
Stewart Roberts, Atlanta.....	1927
G. Canby Robinson, Baltimore.....	1928
Louis B. Wilson, Rochester, Minn.....	1930
A. Benson Cannon, New York.....	1932
J. Shelton Horsley, Richmond.....	1933
Russell L. Cecil, New York.....	1934
George H. Semken, New York.....	1935
Frank H. Lahey, Boston.....	1937
T. M. McMillan, Philadelphia.....	1938
George T. Pack, New York.....	1939
E. V. McCollum, Baltimore.....	1940
Harvey B. Stone, Baltimore.....	1942

SCHEDULE OF THE ANNUAL SESSIONS
AND PRESIDENTS SINCE THE RE-
ORGANIZATION IN 1868

Place and President	Year
Selma—Albert Galatin Mabry.....	1868
Mobile—Albert Galatin Mabry.....	1869
Montgomery—Richard Frazer Michel.....	1870
Mobile—Francis Armstrong Ross.....	1871
Huntsville—Thomas Childress Osborne.....	1872
Tuscaloosa—George Ernest Kumpe.....	1873
Selma—George Augustus Ketchum.....	1874
Montgomery—Job Sobieski Weatherly.....	1875
Mobile—John Jefferson Dement.....	1876
Birmingham—Edward Davies McDaniel.....	1877
Eufaula—Peter Bryce.....	1878
Selma—Robert Dickens Webb.....	1879
Huntsville—Edmond Pendleton Gaines.....	1880
Montgomery—William Henry Anderson.....	1881
Mobile—John Brown Gaston.....	1882
Birmingham—Clifford Daniel Parke.....	1883
Selma—Mortimer Harvey Jordan.....	1884
Greenville—Benjamin Hogan Riggs.....	1885
Anniston—Francis Marion Peterson.....	1886
Tuscaloosa—Samuel Dibble Seelye.....	1887
Montgomery—Edward Henry Sholl.....	1888
Mobile—Milton Columbus Baldridge.....	1889

<i>Place and President</i>	<i>Year</i>
Birmingham—Charles Higgs Franklin	1890
Huntsville—William Henry Sanders	1891
Montgomery—Benjamin James Baldwin	1892
Selma—James Thomas Searcy	1893
Birmingham—Thaddeus Lindley Robertson	1894
Mobile—Richard Matthew Fletcher	1895
Montgomery—William Henry Johnston	1896
Selma—Barckley Wallace Toole	1897
Birmingham—Luther Leonidas Hill	1898
Mobile—Henry Altamont Moody	1899
Montgomery—John Clarke LeGrande	1900
Selma—Russell McWhorter Cunningham	1901
Birmingham—Edwin Lesley Marechal	1902
Talladega—Glenn Andrews	1903
Mobile—Matthew Bunyan Cameron	1904
Montgomery—Capers Capehart Jones	1905
Birmingham—Eugene DuBose Bondurant	1906
Mobile—George Tighlman McWhorter	1907
Montgomery—Samuel Wallace Welch	1908
Birmingham—Benjamin Leon Wyman	1909
Mobile—Wooten Moore Wilkerson	1910
Montgomery—Wyatt Heflin Blake	1911
Birmingham—Lewis Coleman Morris	1912
Mobile—Harry Tutwiler Inge	1913
Montgomery—Robert S. Hill	1914
Birmingham—Benjamin Britt Simms	1915
Mobile—James Norment Baker	1916
Montgomery—Henry Green	1917
Birmingham—William Dempsey Partlow	1918
Mobile—Isaac LaFayette Watkins	1919
Anniston—James Somerville McLester	1920
Montgomery—Louis William Johnston	1921
Birmingham—Dyer F. Talley	1922
Mobile—Walter S. Britt	1923
Montgomery—W. W. Harper	1924
Birmingham—J. D. Heacock	1925
Mobile—C. A. Mohr	1926
Montgomery—A. L. Harlan	1927
Birmingham—John D. S. Davis	1928
Mobile—E. V. Caldwell	1929
Montgomery—L. E. Broughton	1930
Birmingham—W. G. Harrison	1931
Mobile—Toulmin Gaines	1932
Montgomery—Samuel Kirkpatrick	1933
Birmingham—James R. Garber	1934
Mobile—William M. Cunningham	1935
Montgomery—Charles A. Thigpen	1936
Birmingham—Lloyd Noland	1937
Mobile—E. S. Sledge	1938
Montgomery—Seale Harris, Sr.	1939
Birmingham—M. S. Davie	1940
Mobile—Samuel A. Gordon	1941
Montgomery—James M. Mason	1942

SECRETARIES OF THE ASSOCIATION

1852-1854	George A. Ketchum
1854-1855	R. Miller
1869-1873	Jerome Cochran
1874-1878	B. H. Riggs
1879-1892	T. A. Means
1893-1897	J. R. Jordan
1897-1904	G. P. Waller
1904-1906	L. C. Morris
1906-1915	J. N. Baker
1915-1923	H. G. Perry
1923-1924	Douglas L. Cannon

1924-1930	B. B. Simms
1930-1940	Douglas L. Cannon

TREASURERS OF THE ASSOCIATION

1854-1855	W. P. Reese
1869-1898	W. C. Jackson
1898-1915	H. G. Perry
1915-1939	J. U. Ray

SECRETARY-TREASURERS OF THE ASSOCIATION

1940-	Douglas L. Cannon
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SCHEDULE OF JEROME COCHRAN LECTURERS

1899—J. T. Searcy, Tuscaloosa—What Is Insanity?
1900—Wm. Osler, Baltimore—Not present.
1901—Wm. Osler, Baltimore—Not present.
1902—Nathan Bozeman, New York—Declined.
1903—George H. Price, Nashville—The History of Medicine.
1904—W. S. Thayer, Baltimore—Cardiac and Vascular Complications of Typhoid Fever.
1905—Robert Abbe, New York—The Problems of Surgery.
1906—Joseph Collins, Boston—Arteriosclerosis.
1907—Nicholas Senn, Chicago—Final Triumph of Scientific Medicine.
1908—E. L. Marechal, Mobile—Absent.
1909—Lewellys F. Barker, Baltimore—Clinical Methods of Cardiac Investigation.
1910—Frank S. Meara, New York—Some Problems of Nutrition in Early Life.
1911—Rudolph Matas, New Orleans—Inflammatory Tuberculosis.
1912—Maurice H. Richardson, Boston—Elimination of Preventable Disasters from Surgery.
1913—L. L. Hill, Montgomery—Surgical Complications and Sequelae of Typhoid Fever.
1914—Frank Smithies, Chicago—Contributions of the Twentieth Century to the Better Understanding of Gastric Cancer.
1915—John B. Elliott, Jr., New Orleans—Abscess of Liver.
1916—Howard A. Kelly, Baltimore—Radium Therapy.
1917—Wm. J. Mayo, Rochester—Importance of Septic Infection in the Three Great Plagues.
1918—George E. Bushnell, Washington—The Army in Relation to the Tuberculosis Problem.
1919—George W. Crile, Cleveland, Ohio—Abdominal Surgery in Civil and Military Hospitals.
1920—Henry A. Christian, Boston—Bright's Disease With Special Reference to Its Treatment.
1921—J. Whitridge Williams, Baltimore—A Critical Review of Twenty-One Years' Experience with Caesarean Section.
1922—Chas. H. Mayo, Rochester, Minn.—The Thyroid and Its Diseases.
1923—Jas. S. McLester, Birmingham—Nutrition in Its Newer Aspects.
1924—James S. Stone, Boston—Abdominal Diagnoses in Children.

1925—H. A. Royster, Raleigh—The Surgeon's Heritage and Outlook.

1926—Stewart Roberts, Atlanta—The Heart Muscle.

1927—G. Canby Robinson, Baltimore—The Mechanism of Heart Failure and Its Correction.

1928—John B. Deaver, Philadelphia—Chronic Pancreatitis.

1929—Louis B. Wilson, Rochester, Minn.—Some Suggestions for Improved Training of Medical Specialists.

1930—Walter E. Sistrunk, Dallas, Texas—The Part That Surgical Anesthesia Has Played in Medical Science.

1931—R. S. Cunningham, Nashville, Tenn.—Studies on the Pathology of Tuberculosis and Syphilis.

1932—A. Benson Cannon, New York—Practical Points on the Diagnosis and Treatment of the so-called Lymphoblastoma Group of Diseases.

1933—J. Shelton Horsley, Richmond—Cancer of the Stomach and Colon.

1934—Russell L. Cecil, New York—Present Trends in the Study of Rheumatic Fever and Rheumatoid Arthritis.

1935—George H. Semken, New York—A Consideration of Tumors of the Breast.

1936—William D. Partlow, Tuscaloosa—A Debt the World Owes Medical Science.

1937—Frank H. Lahey, Boston—Carcinoma of the Colon and Rectum.

1938—T. M. McMillan, Philadelphia—An Optimistic View of Some of the Problems of Heart Disease.

1939—George T. Pack, New York—Recent Advances in the Radiation Therapy of Cancer.

1940—E. V. McCollum, Baltimore—Some Contributions of Nutritional Research to Clinical Medicine.

1941—M. Y. Dabney, Birmingham—The Story of Breast Cancer.

1942—Harvey B. Stone, Baltimore—Biliary Diseases as Seen by a Surgeon.

F. W. Wilkerson (1943) Montgomery
J. D. Perdue (1944) Mobile
Lloyd Noland (1944) Fairfield

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MONTGOMERY, APRIL 21-23, 1942

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 Donald, T. C., Birmingham
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 Douglas, G. F., Birmingham
 DuBois, J. S., Enterprise

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Jones, W. N., Birmingham
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SUMMARY OF ANNUAL ATTENDANCE

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1913	7	49	83	124	17	280	Mobile
1914	16	67	85	226	20	414	Montgomery
1915	32	74	108	429	49	692	Birmingham
1916	19	66	92	106	41	306	Mobile
1917	18	64	96	199	32	409	Montgomery
1918	27	63	80	257	44	471	Birmingham
1919	22	43	87	94	102	348	Mobile
1920	16	61	59	85	51	272	Anniston
1921	26	65	73	183	58	405	Montgomery
1922	26	72	76	314	68	556	Birmingham
1923	14	48	66	106	50	284	Mobile
1924	29	70	84	230	79	492	Montgomery
1925	27	78	97	328	113	643	Birmingham
1926	33	74	105	194	131	537	Mobile
1927	36	85	104	252	87	564	Montgomery

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1928	33	77	108	507	106	831	Birmingham
1929	19	60	102	176	109	466	Mobile
1930	32	83	106	286	102	609	Montgomery
1931	26	80	116	410	158	790	Birmingham
1932	19	60	101	158	133	471	Mobile
1933	21	74	103	264	85	547	Montgomery
1934	26	75	97	404	53	655	Birmingham
1935	15	59	91	180	83	428	Mobile
1936	23	79	95	265	68	530	Montgomery
1937	25	80	96	396	81	678	Birmingham
1938	18	65	78	157	63	381	Mobile
1939	29	79	96	326	84	614	Montgomery
1940	29	77	105	401	229	841	Birmingham
1941	29	66	86	211	91	483	Mobile
1942	33	75	105	249	82	544	Montgomery

NEXT ANNUAL MEETING
BIRMINGHAM
APRIL 20-22, 1943

STATE DEPARTMENT OF PUBLIC HEALTH

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

THE NECESSITY FOR MORE VENEREAL CLINICS

The war effort of the United States is creating problems in many fields not the least of which come within the province of the medical profession. One of these problems is the question of venereal diseases. Infection with a venereal disease is, at present, ground for rejection of an applicant to the armed forces, and this rejection continues until such time as the individual has received adequate treatment. The Selective Service System is relying on the medical profession through the health department to furnish this treatment and fit these men for active duty at the earliest possible moment.

Throughout the years a very workable plan for the mass treatment of venereal infections has been evolved in Alabama. That program is having an increased load thrown on it today and existing facilities in many counties are taxed to the limit. An additional difficulty and one that will become more acute with the passage of time is the question of transportation. Patients no longer can travel long distances to a central clinic, and yet the need of their continued treatment is more important than ever. The only answer apparently is an increase in the number of sessions of existing clinics and an increase in the number of points at which clinics are held. In other words, carry the treatment to the patient if existing facilities do not serve the total area. In a number of counties this procedure is already being carried out with a decentralization of clinic facilities. This policy is, of course, adding tremendously to the work of county health departments but it is realized that certain programs must take precedence during war time and that this is one of them. Physicians to man these clinics is another problem and again the army demands for physicians will throw additional burdens on those left for civilian duty. It is believed, however, that the doctors, who for any reason are not called to military duty, will see the necessity of this phase of war work and plan to devote a certain amount of time to clinic service.

BUREAU OF MATERNAL AND CHILD HEALTH

J. S. Hough, M. D., Acting Director

INFANT DEATHS IN ALABAMA

Out of 3,862 infants under one year of age who died in Alabama in 1940, 1,057 were premature infants. Alabama has one of the highest death rates for children under one year of age in the United States. In fact, Alabama's infant death rate is 31 per cent higher than that of the United States as a whole. Only five states have a higher infant mortality.

Some of the important causes for this high death rate may be listed:

1. Ignorance of elementary facts concerning the care of infants during the first month of life.
2. Inadequate or no medical care during antepartal, delivery and postpartal periods.
3. Untreated syphilis in the expectant mother.
4. Inadequate protection and care of premature infants.
5. Lack of pasteurized milk and the improper feeding of infants.
6. Lack of continuous medical and nursing supervision of infants.
7. Hookworms and other intestinal parasites.
8. Scarcity of physicians and nurses trained in the care of infants.
9. Failure to immunize against the preventable diseases.
10. Failure of the community to realize the importance of protecting the lives and health of infants and children and to provide funds for their protection.

Probably a majority of infant deaths would be prevented if these causes were overcome. Essential needs for better care for infants and children are education; proper medical care before, during and after delivery; proper diet; continuous medical and nursing care of infants by private physician or at health conferences; provision of volunteer transportation to the health conferences; and the provision of local funds in addition to state and federal funds and the full support of the local health departments.

CURRENT STATISTICS
***PREVALENCE OF COMMUNICABLE**
DISEASES IN ALABAMA
1942

	March	April	Estimated Expectancy April
Typhoid	7	7	14
Typhus	10	8	10
Malaria	44	98	125
Smallpox	2	1	7
Measles	1102	748	788
Scarlet fever	89	64	41
Whooping cough	95	208	205
Diphtheria	19	24	37
Influenza	1275	741	433
Mumps	290	418	200
Poliomyelitis	4	0	2
Encephalitis	0	2	3
Chickenpox	251	182	196
Tetanus	3	0	5
Tuberculosis	191	216	264
Pellagra	3	10	26
Meningitis	6	17	11
Pneumonia	435	371	471
Syphilis	1309	1366	1266
Chancroid	19	12	8
Gonorrhea	341	439	333
Ophthalmia neonatorum	0	5	1
Trachoma	0	0	0
Tularemia	1	1	2
Undulant fever	0	0	2
Dengue	0	0	0
Amebic dysentery	2	0	0
Cancer	130	135	0
Rabies—Human cases	0	0	0
Positive animal heads	29	30	---

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

Pasteurization Ordinance Upheld—It has been reported by J. C. Geiger, M. D., Director of Public Health in the City and County of San Francisco, that an ordinance banning the sale of milk in San Francisco, except certified, unless it was pasteurized, which was passed in 1933 by the Board of Supervisors, was finally upheld as a proper exercise of the police power by a decision of the Supreme Court of California rendered April 2, 1942.

Outlining the development of this legislation, Dr. Geiger stated that the request for the pasteurization of all milk supplies, except certified, was brought to a focus by the situation existing in San Francisco in 1932, at which time approximately 2 to 3 per cent of the fluid milk supply was of a raw grade designated as guaranteed, and that tuberculin testing of animals was not universal or complete.

The Director of Public Health barred the distribution of guaranteed raw milk because of the fact that the inspection given by the Department of Public Health to dairy farms producing this type of raw milk was inadequate and, therefore, the production, handling, and distribution of guaranteed raw milk created a potential danger to the public health. Under the then existing conditions, sufficient personnel to cover the duties imposed on inspection services necessary to safeguard the production, handling, and distribution of raw milk was not available. In the case of the production, handling, and distribution of certified milk, the inspection service provided by the Milk Commission of the San Francisco County Medical Society was entirely adequate, and the inspection

service was frequent and performed by dairy veterinarians and physicians. This type of milk was later pasteurized and finally voluntarily eliminated.

The Natural Milk Producers Association, an organization composed of grade A raw and guaranteed raw milk producers, contested the ordinance of 1933 banning the sale of raw milk, except pasteurized, by applying to the Superior Court for a permanent injunction. This was denied in 1933. In 1938 the Superior Court upheld the ordinance and in 1941 the District Court of Appeals unanimously affirmed this decision. In upholding the provisions of the ordinance the Supreme Court in its 1942 decision stated: "It cannot be doubted . . . that the requirement that all milk for human consumption be pasteurized is a proper police regulation."—*Am. J. Pub. Health*, May 1942.

U. S. Quinine Supply—The Reconstruction Finance Corporation recently announced that 500,000 ounces of the 2 million ounces of quinine that it had purchased on the recommendation of the War Production Board had been lost at sea. The Netherlands Indies which has supplied the world with 90 per cent of its cinchona bark and derivatives now being cut off, it becomes a problem to know how the annual consumption of the United States of 3½ million ounces of quinine can be supplied. It was expected that the trade and private consumers had between one and two years' supply on the shelf.

The Federal Loan Administration announced that the Defense Supplies Corporation had purchased 1½ million ounces and had agreed to purchase cinchona bark equivalent to more than 3 million ounces, arranging for its immediate shipment to Australia for trans-shipment to the United States. This is expected to supplement the supplies obtainable from Peru, Bolivia, Brazil, Venezuela, Colombia, and Guatemala. The United States Government and private American drug interests have fostered experimental work recently in South America looking toward the production of types of cinchona yielding higher amounts of quinine.

Announcement was also made that substantial progress had been achieved in the manufacture of true synthetic quinine through the U. S. Public Health Service. Unlimited quantities of atabrine can be produced in the United States and it was expected that there was little likelihood of shortages in quinine itself for its essential purposes.—*Am. J. Public Health*, May 1942.

Public Health in the National Emergency—Public health workers are more than glad to do their share in meeting the responsibilities of these times, and the medical and dental professions have demonstrated a like spirit. However, it cannot be emphasized too strongly that necessary service on the home front is equally as important as service in the Army. Even though we recognize aggressive war as our No. 1 problem, it behooves us not to be forgetful that a major phase lies in holding the health gains already made.—*Underwood*, *Am. J. Pub. Health*, May 1942.

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THE JOURNAL OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Volume 11

July 1941-June 1942

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Y

- Year book of obstetrics and gynecology: DeLee 375.
Year book of public health, 1941: Geiger, ed. 178.

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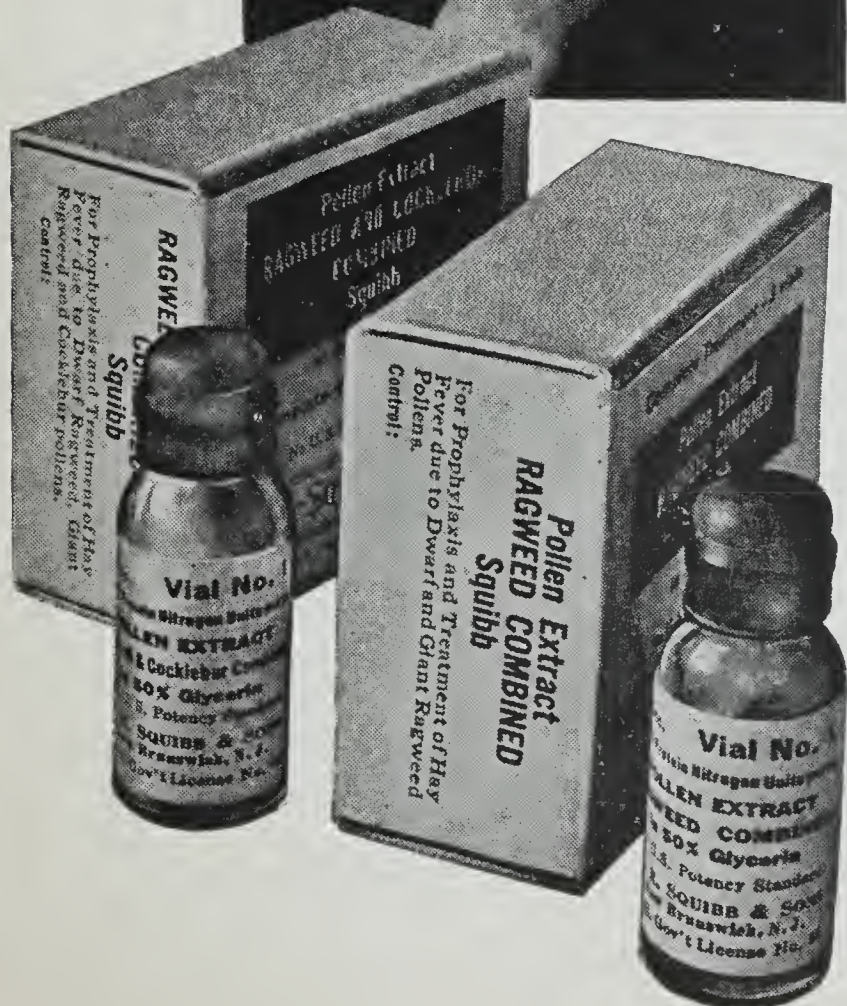
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¹ Cooke, R. A., and Stull, A.: *J. Allergy* 4: 87, 1933.



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Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by *Neisseria gonorrhoeae*.¹ An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph., Gon. & Ven. Dis.*, **23**, 201 (March), 1939.

JOHN WYETH & BROTHER, INCORPORATED, PHILADELPHIA



Miscellany

USEFULNESS OF SULFADIAZINE POINTED OUT IN TWO REPORTS

EVIDENCE INDICATES NEW DRUG IS LESS TOXIC AND MORE EFFECTIVE FOR SOME INFECTIONS THAN OTHER SULFANILAMIDE DERIVATIVES

Two reports on conditions which may be treated with sulfadiazine, a new derivative of sulfanilamide, and indicating that not only is the drug an effective treatment agent for the infections named but also is much less toxic than sulfathiazole and sulfapyridine, two older derivatives, are published in the *Journal of the American Medical Association* for June 14.

In the treatment of pneumococcic, staphylococcic and streptococcic pneumonias, acute infections of the upper part of the respiratory tract, erysipelas, acute infections of the urinary tract, acute gonorrheal arthritis and meningitis (infection of the membranes enclosing the spinal cord and brain), Maxwell Finland, M. D., Elias Strauss, M. D., and Osler L. Peterson, M. D., Boston, report that sulfadiazine is highly effective. Their find-

ings are based on the treatment of 446 patients.

John H. Dingle, M. D., and Lewis Thomas, M. D., Boston, in another paper in *The Journal*, report that there were no deaths among 11 patients suffering from meningitis who were treated with sulfadiazine and say that the drug also is preferable to sulfapyridine in the treatment of this disease because it is less toxic in that nausea, vomiting, mental symptoms and other reactions often attributable to sulfanilamide drugs did not occur.

Drs. Finland, Strauss and Peterson found no well defined beneficial effects resulted from the use of sulfadiazine for chronic infections of the urinary tract, chronic gonococcic arthritis, subacute bacterial endocarditis (inflammation of the membrane lining of the heart) or chronic infections of the lungs. In all patients in whom sulfadiazine was not effective and in whom other sulfonamides were tried, the latter were likewise ineffective.

"The results," the three authors say, "in the cases of pneumococcic pneumonia treated with sulfadiazine are comparable in ev-

ery respect with the best results obtained in this clinic with the use of either sulfapyridine or sulfathiazole. In all other conditions the number of cases is too few to warrant definite conclusions or comparisons. In general sulfadiazine appeared to be as effective as sulfapyridine or sulfathiazole in every condition in which it was used.

"Toxic effects from sulfadiazine were relatively mild and infrequent. . . A number of patients with definite evidence of renal (kidney) or hepatic (liver) damage were treated with sulfadiazine without further impairment and, in some instances, with actual improvement of function in the course of therapy (treatment). Some patients with initial leukopenia (diminished white blood cell count) showed a rise in the white blood count during sulfadiazine therapy.

"Sixty-six patients received both sulfathiazole and sulfadiazine, and toxic effects from sulfathiazole were three times as frequent as they were during sulfadiazine therapy."

In discussing the results of sulfadiazine treatment of meningitis, Drs. Dingle and Thomas say that "Considerable clinical improvement was apparent on the second or third day of chemotherapy (drug treatment), as indicated by relief of malaise and headache and return of appetite. Temperature responses of most patients were prompt and occurred simultaneously with the subjective improvement."

The 11 patients were admitted consecutively to the Infectious Disease Hospital of Halifax, Nova Scotia, during the peak of an epidemic in January and February 1941.

Three other patients mentioned in their report, 2 with meningitis and 1 with meningococci (the organisms which cause epi-

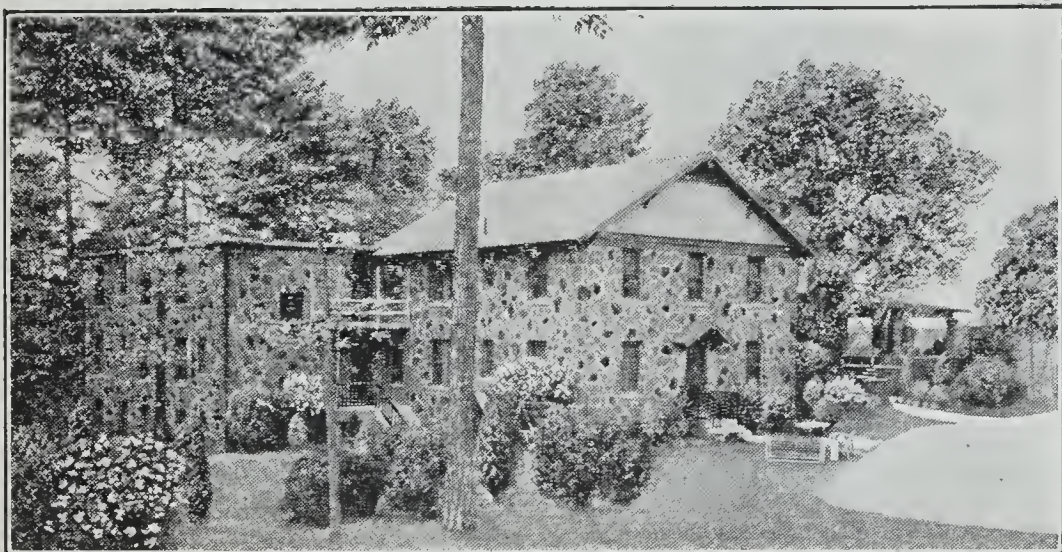
demetic meningitis) in the blood stream with arthritis but no evidence of meningitis, were admitted to the Boston City Hospital and treated with sulfadiazine. Two of these patients recovered, the other 1, with meningitis, died ten hours after admission to the hospital and of course received but little of the drug in this time.

CONTROLLING THERAPEUTIC MALARIA

Another solution of the problem of keeping under control the malaria induced in a patient for treatment of syphilis of the central nervous system and dementia paralytica (a chronic brain disease due to syphilitic infection) is reported in The Journal of the American Medical Association for June 14 by C. W. F. Winckel, M. D., Amsterdam, Netherlands. He reports that neoarsphenamine will temporarily arrest the malaria when it is necessary to do so in order to enable the patient to recover sufficiently to continue with the malaria treatment for the time required to obtain the maximum benefits from the fever.

It was reported last August that injections of theobismol would temporarily arrest the chills and fever of malaria. Dr. Winckel points out that his studies show that in reality "neoarsphenamine has a double effect in the treatment of dementia paralytica, not only as a antisiphilitic drug but also in the management of the course of the fever in therapeutic (treatment) malaria.

"Various strains of Plasmodium vivax (the species of the malaria parasite which causes the tertian or every forty-eight hour chill form of malaria)," the author explains, "are not equal in their sensitivity."



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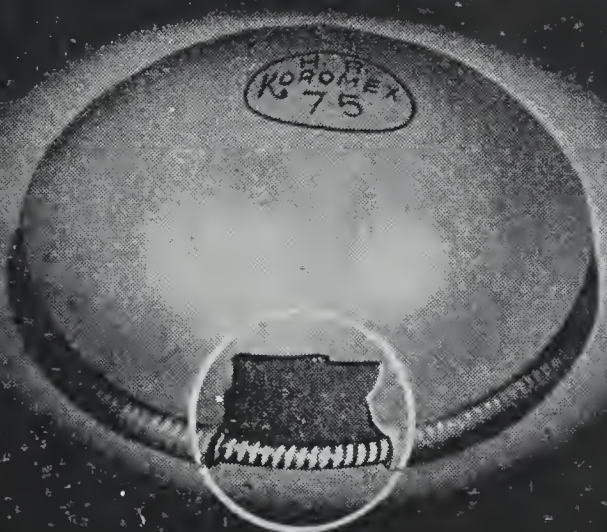
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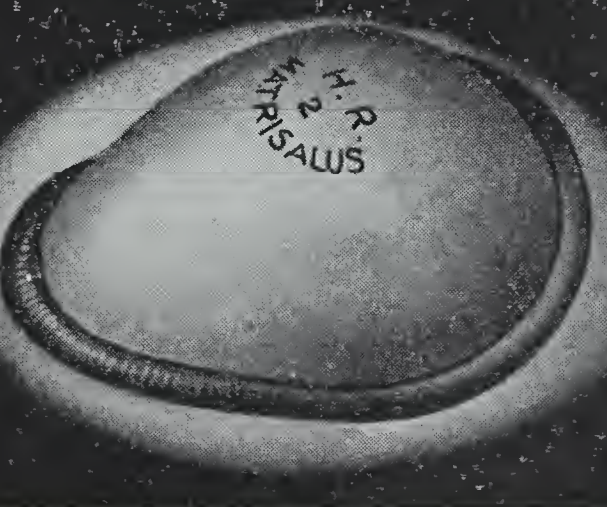
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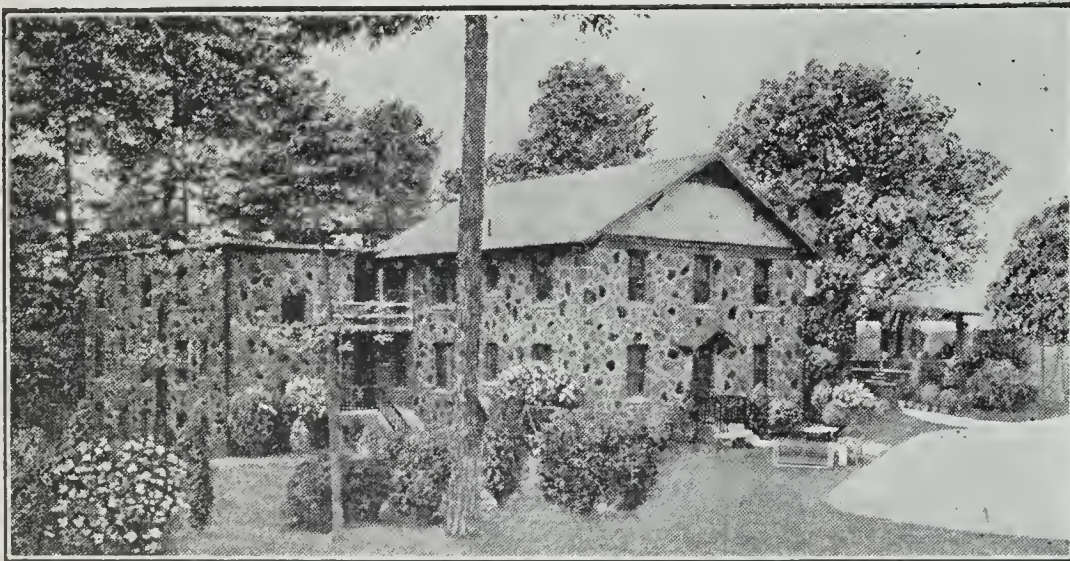
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Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by *Neisseria gonorrhoeae*.¹ An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph., Gon. & Ven. Dis.*, 23, 201 (March), 1939.

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Miscellany

SULFANILAMIDE EFFECTIVE AGAINST FLARE-UPS OF RHEUMATIC FEVER

Evidence that the maintenance of certain levels of sulfanilamide in the blood by means of administering small daily doses is effective in preventing hemolytic streptococcal infections and the consequent flare-ups of rheumatic fever in persons known to be subject to recurrences is presented in *The Journal of the American Medical Association*

for July 19 by A. F. Coburn, M. D., and L. V. Moore, M. D., New York.

The two authors point out that a previous study had indicated that the maintenance throughout the school year of a certain level of sulfanilamide in the blood protected the children against streptococcal pharyngitis (inflammation of the pharynx) and rheumatic recrudescences. "One factor that it was impossible to control in the New York study," they say, "was the increasing age of the group."


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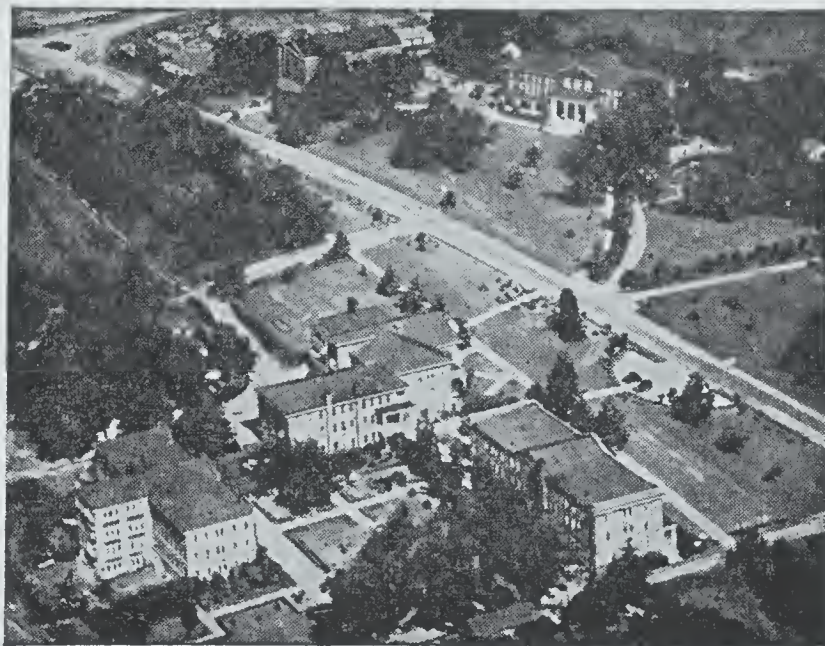
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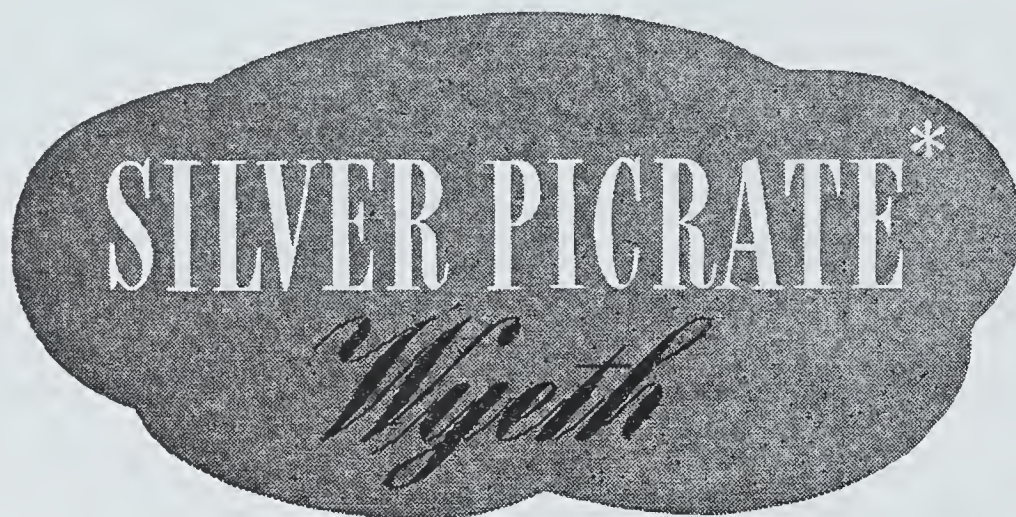
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Miscellany

GROWING HEALTH MENACE OF RATS POINTED OUT BY HYGEIA WRITER

WARNS OF THE SPREAD NORTHWARD AND INLAND
IN PAST FOUR YEARS OF RAT-BITE FEVER
FROM GULF AND SOUTHEASTERN COASTS

The growing health menace of the rat is pointed out in *Hygeia*, The Health Magazine for September by James Nevin Miller, Washington, D. C., who warns that "During the past four years rat-bite fever, also known as murine fever, has been spreading northward and inland from its former stronghold on the Gulf and Southeastern coasts. This year it has invaded Washington, D. C., and while only 2 cases have been reported thus far, the potential menace to the entire nation of this destroyer of health can scarcely be exaggerated. . .

"This animal (the rat) is the world's most notorious disease carrier, with perhaps two exceptions, the tick and the flea. And when it is realized that the rat, in addition to its own ability as a carrier, is often infested with both of these death-dealing agencies at

the same time, its true worth as a human health menace is fully appreciated.

"No less than seven major diseases and illnesses are known by medical science to be transmitted or caused by rats and almost a dozen more are under suspicion. Besides bubonic plague and typhus fever, the list includes pneumonic plague, jaundice, parasitic mange, tapeworm and perhaps foot and mouth disease."

Among the disease germs which rats are suspected of carrying, Mr. Miller says, are those of sleeping sickness, leprosy and infantile paralysis. They are also responsible for the transfer of certain ailments, notably equine influenza, to other animals.

Concerning rat-bite fever, the author says: "For several years rat-bite fever has been spreading northward and inland from its original stronghold in the deep South. Its recognition as a communicable disease, subject to control, is recent. According to the Public Health Service, the cause is a spiral organism which can be found in the infected animal's saliva and which is injected into a human being when a rat bites him. No inoculation has proved practical to prevent

any one from catching rat-bite fever, nor is there any remedy for it. It can be recognized by a rash that spreads across the abdomen and around the small of the back about five days after the fever starts. The symptoms and discomfort are similar to those of influenza but far more severe."

Red squill powder, Mr. Miller says, "has been shown by government tests conducted on a nationwide basis and under all conceivable conditions to be the safest and best rat poison in America. If properly used, it destroys at least 75 per cent of all rodents treated. This raticide is made from a kind of sea onion native to the Mediterranean countries. Toxic powders should be mixed, Uncle Sam says, which will insure a killing dose even if the rat eats only a small quantity of the poisoned baits. All rats poisoned in this way should die within five days. The poison paralyzes them. Baits used with red squill are fish, meat, cereals, fruits and vegetables. . .

"The best weapon against the four-footed predators is cleanliness, which means quick and efficient removal of garbage from homes, restaurants, hospitals and industrial establishments. The other main approach to the problem, so far as the average householder is concerned, is to try to keep down their numbers by trapping and poisoning. The procedures are easily obtainable since all that is necessary is to phone the local health department for complete information. . .

"Rats do not keep to the slums and the industrial and wholesale market areas. They go wherever there is food and cover and today that means that they are swarming by the millions in most of our large cities. It is hard to determine which section of the na-

tion suffers most from these rodents, but many investigators claim it is the Middle West, the big corn center, since rats are especially fond of this grain. West of the Rockies, domestic rats are found only in communities on the Pacific coast, in the valleys of formerly navigable rivers and in a few other isolated places. This situation greatly reduces the disease hazard to human beings.

"Fortunately for the health of the nation, most big cities now have a police regulation requiring citizens to keep garbage and trash containers tightly closed. . .

"Fumigation with hydrocyanic acid gas is the Public Health Service's most effective means of reducing a large rat population aboard ships. In this connection two new pieces of equipment have been developed. One is a pump which forces the gas into the tiniest rat harborages. It can be operated easily by one man. The other apparatus is a more efficient type of gas mask that affords the fumigator fool-proof protection against the life snuffing fumes of the poison."

ALKALI HELPS REDUCE COMPLICATIONS OF SULFATHIAZOLE

The administration of an alkali, such as sodium bicarbonate, with sulfathiazole, and possibly also with sulfadiazine, two derivatives of sulfanilamide, is advised by Leon Schwartz, M. D.; Harrison F. Flippin, M. D.; John G. Reinhold, Ph. D., and Albert H. Domm, M. D., Philadelphia, in The Journal of the American Medical Association for August 16 as a means of decreasing the incidence and number of crystals of these drugs in the urine.

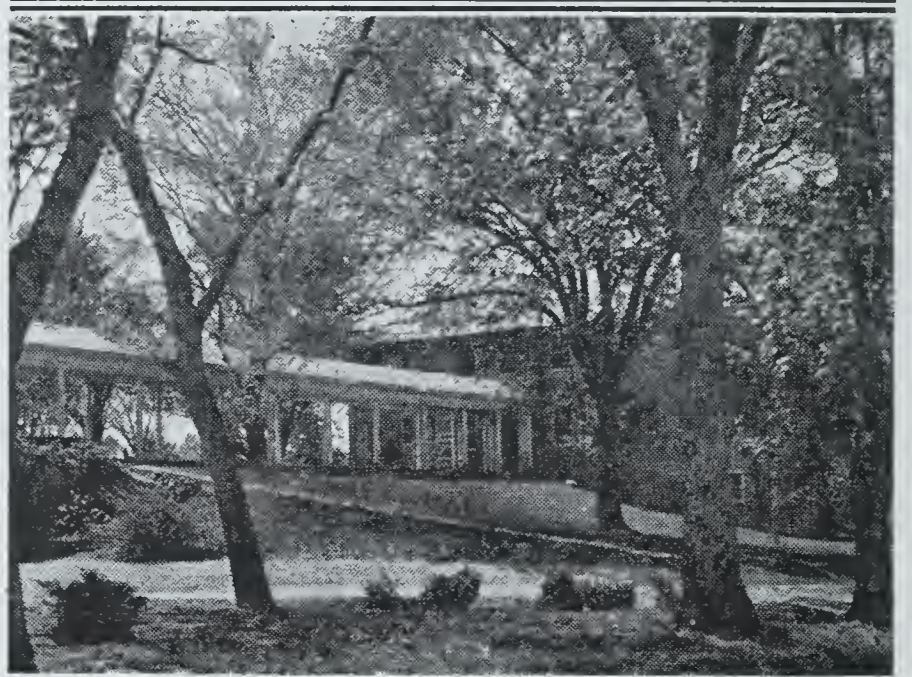


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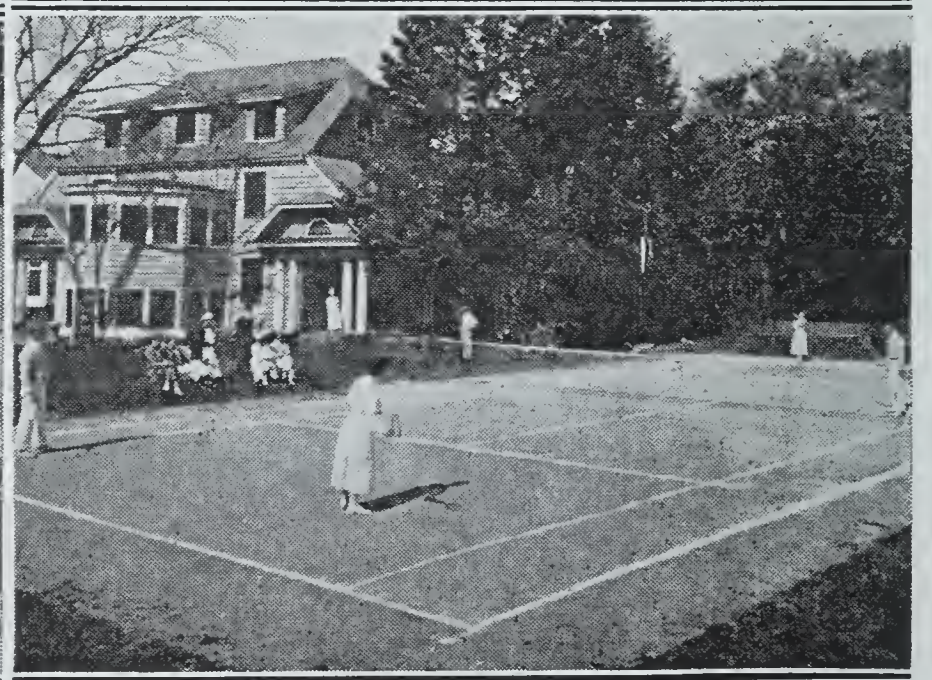
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Miscellany

HEPARIN AND SULFATHIAZOLE EFFECTIVE FOR RARE BUT HIGHLY FATAL AILMENT

The combined use of heparin, a recently discovered anticoagulant, and sulfathiazole proved effective in the treatment of a case of cavernous sinus thrombosis, a comparatively rare but highly fatal condition involving a clot in a large blood cavity back of the eye next to the brain, Irving L. Ershler, M. D., and Irl H. Blaisdell, M. D., Syracuse, N. Y., report in *The Journal of the American Medical Association* for September 13. Their experience in this case, however, shows that extreme caution must be exercised in the use of heparin because of the possibilities of dangerous bleeding in vital areas within the body.

"Theoretically the combination of heparin and sulfathiazole should yield better results in the treatment of cavernous sinus thrombosis than any other measures previously employed," the two physicians say. "Heparin prevents extension of the thrombus (clot), thus allowing for its lysis (dissolution). Sulfathiazole not only affords an effective means of combating the original focus of infection but maintains the sterility of the blood stream, thereby preventing meningitis (inflammation of the membrane linings of the brain), septic emboli (putrefied blood clots brought by the blood stream from some other portion of the body and forced into a small vessel so as to obstruct circulation) and other sequelae.

"The intravenous (into the vein) administration of heparin produces a significant

prolongation of the coagulation time, which is in fact a hemorrhagic diathesis (the same as an inherited disposition to hemorrhage). Consequently there may be produced dangerous bleeding in vital areas of the body. . . . Bleeding from cerebral (brain), pulmonary (lung) or coronary (heart) vessels might conceivably result in disaster."

In their case report the two men say that the patient, a college girl aged 22, had a blood coagulation time of two and one-half minutes before they started administering heparin. During the nine days that heparin was administered they endeavored to maintain an approximate coagulation time of two hours. Two days after the administration of heparin was started blood began to appear in the urine and during successive days the condition continued and increased in severity and there also was evidence of hemorrhage into both elbow joints. At the end of nine days the condition of the patient had progressed to the point where it was decided to discontinue the administration of heparin and sulfathiazole. Thirteen hours later the urine began to clear up and the administration of sulfathiazole was reinstituted. Within a few days the urine was entirely clear and the previously immobile elbow joints rapidly resumed normal function. The blood coagulation time promptly returned to normal and three blood transfusions relieved the anemic condition of the blood in a few days.

NEXT MEETING OF THE ASSOCIATION MONTGOMERY

APRIL 14-16, 1942



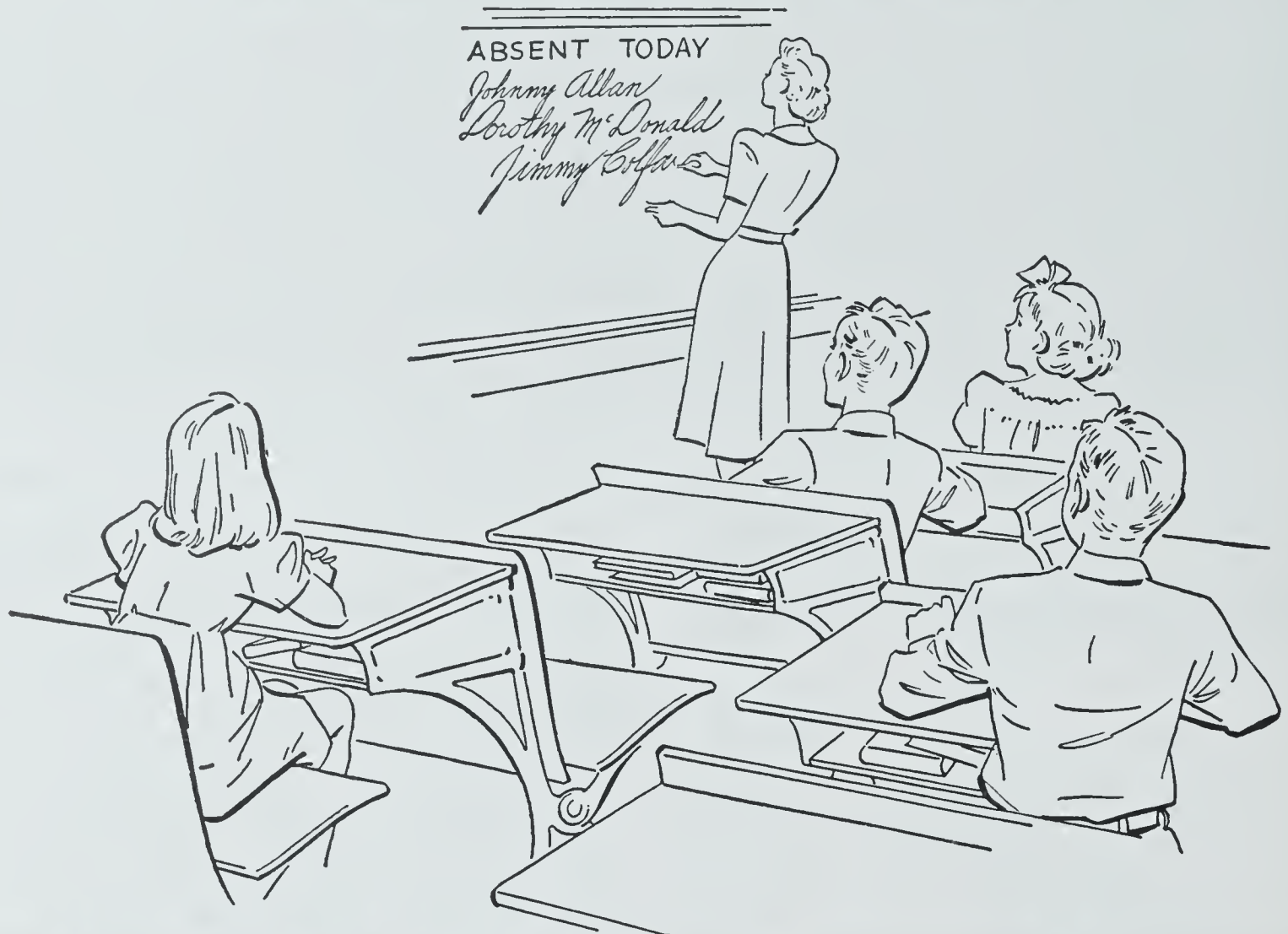
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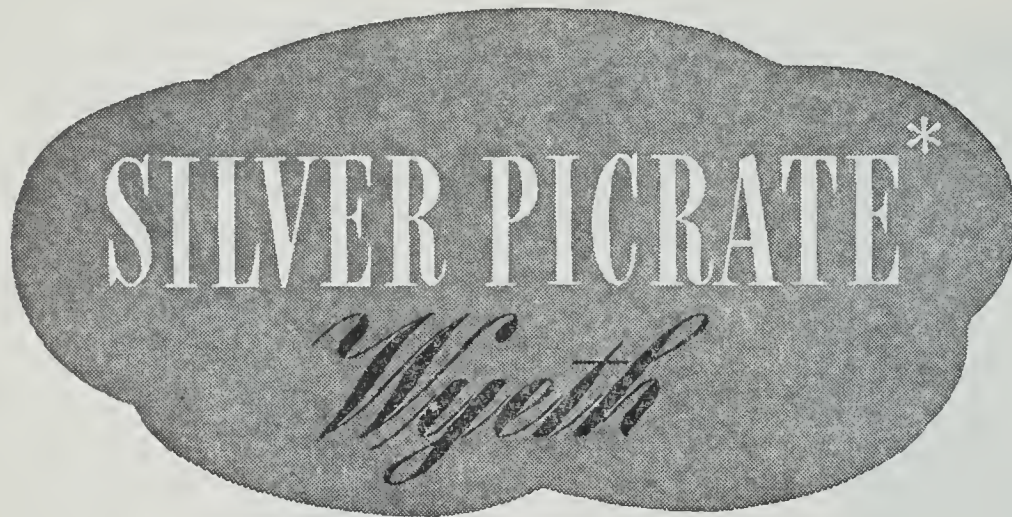
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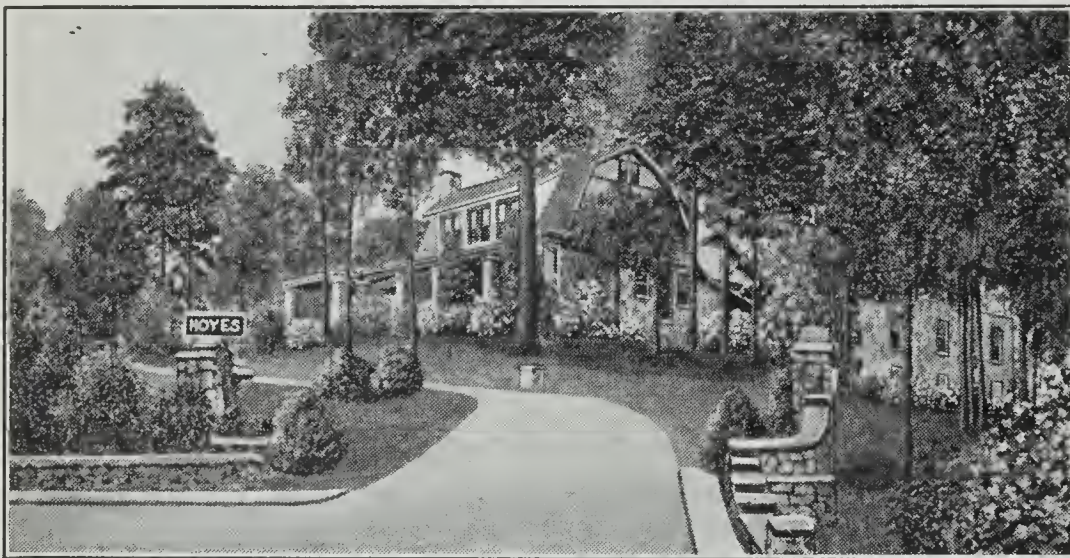
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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," *Am. J. Syph., Gon. & Ven. Dis.*, 23, 201 (March), 1939.

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Miscellany

WARNS OF DANGERS IN ADMINISTERING SULFANILAMIDE DURING PREGNANCY

The administration of sulfanilamide during pregnancy is not without danger to the baby because of the rapidly attained similarity of levels of the drug in the blood of the mother and the fetus, George P. Heckel, M. D., Rochester, N. Y., reports in *The Journal of the American Medical Association* for October 18.

This warning is based on the findings in 13 mothers who received sulfanilamide or its derivatives during pregnancy. A severe anemia in the infant of 1 of them at birth suggests fetal injury from sulfanilamide, the author states. However, unless an infant is unusually sensitive to sulfanilamide there is little likelihood of any injury from the amounts of the drug obtained in the milk from the mother.

Miscellany

VITAMIN C MAY CHECK REACTIONS TO THE ANTISYPHILITIC DRUGS

CHICAGOANS REPORT STUDIES HOLDING PROMISE OF SOLVING PROBLEM OF TREATING PERSONS HYPERSENSITIVE TO THE ARSENICALS

Evidence that ascorbic acid (vitamin C) may be the solution to the treatment problem presented by those persons with syphilis who are hypersensitive to the antisypilic drugs known as arsenicals is presented in The Journal of the American Medical Association for November 15 by Herman N. Bundesen, M. D.; Hans C. S. Aron, M. D.; Regina S. Greenebaum, M. D.; Chester J. Farmer, M. A., and Arthur F. Abt, M. D., Chicago.

"Our studies," the Chicagoans say, "give promise that the majority of hypersensitive patients whose local cutaneous (skin) reaction to neoarsphenamine (a derivative of arsphenamine or salvarsan) is fully prevented by ascorbic acid should be able to tolerate intravenous therapeutic doses (injected into the vein) of neoarsphenamine if the ascorbic acid in the circulating blood is maintained at a level high enough to inhibit the formation of toxic (poisonous) products of oxidation."

It is pointed out by the authors that the number of people who have severe symptoms of intolerance to neoarsphenamine is still considerable. "In the recent reports of the medical corps of the United States Navy," they say, "the following figures are given: During the fifteen year period from 1925 to 1939, 1,301,913 doses of neoarsphenamine were administered; 305 severe reactions and 49 deaths were recorded following these injections, or 1 death or severe reac-

tion to every 3,678 administrations of the drug. In addition, 618 mild reactions were recorded, giving a ratio of 1 reaction to every 1,346 doses of neoarsphenamine administered. Any prospect of a way to reduce the incidence of these unfortunate reactions should be vigorously pursued."

The work of the Chicagoans supports previously reported studies indicating the possibility that vitamin C has a beneficial influence on arsenical sensitivity. The studies of the authors were conducted with neoarsphenamine and mapharsen, a proprietary antisypilic drug related to arsphenamine. They found that when solutions of the two drugs are left in contact with air, brownish black oxidation products are formed but that this oxidation can be prevented for a period of at least forty-eight hours when 1 part of ascorbic acid by weight is added to 3 parts of neoarsphenamine. Mapharsen solutions may be protected from oxidation in a similar way. It was also found that the same oxidation takes place when patches soaked in solution of neoarsphenamine or mapharsen are applied to the skin. "When ascorbic acid is added to the patch test solutions these changes can be completely prevented," the authors declare.

"A total of 115 patients was subjected to patch tests with neoarsphenamine. Eighteen of these patients were controls who previously had never had symptoms of intolerance to arsenicals. Four of the 18 control patients had positive reactions to the patch tests and were designated as 'pseudoreactors.' Of the remaining 97 patients who had previously shown symptoms of intolerance, 60 gave no reaction to the patch tests of neoarsphenamine. . ."



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War Medicine

CONQUERING OF GAS GANGRENE IS INDICATED IN TWO REPORTS

INVESTIGATIONS REPORTED IN WAR MEDICINE OF EXPERIMENTAL CONTROL AND PREVENTION OF ONE OF DEADLY FOES OF THE WOUNDED

Two reports indicating that gas gangrene, one of the deadly foes of the wounded, may be conquered, are contained in the current issue of *War Medicine*, published by the American Medical Association, Chicago, in cooperation with the Division of Medical Sciences of the National Research Council.

Sarah E. Stewart, Ph.D., Bethesda, Md., announces the development of a toxoid that has proved to be effective in immunizing guinea pigs against the most common of the three types of organisms generally involved in gas gangrene.

Sulfanilamide or one of its derivatives has been found to successfully control experimental gas gangrene in guinea pigs, G. B. Reed, Ph.D., and J. H. Orr, M. D., Kingston, Ont., report in another paper in the same issue of *War Medicine*.

"Active immunization of man against infection with bacteria of the gas gangrene group has been given little consideration," Dr. Stewart points out in the introduction to her report. "In view of the marked progress which has been made in immunization against diphtheria and tetanus by use of their respective toxoids, it seems reasonable to believe that success could be attained against gas gangrene."

Toxoid is the toxin or poisonous substance secreted by an organism, the toxicity of which has been destroyed but which is still capable of inciting the formation of antibodies.

Dr. Stewart says that "During the first World War, it was found that in the different phases of the conflict the incidence of gas gangrene varied greatly in the wounded. The highest figures were always observed at the time of active operation, chiefly at the beginning of the war, when the wounded were not collected with the usual rapidity and when treatment was necessarily delayed. Since the gas gangrene anaerobes (micro-organisms capable of living without air or free oxygen) grow rapidly, death may ensue within a few hours of injury. It is essential, therefore, if immunity to this type of infec-

tion is to be present following injury, that it be built up prior to the time of injury. . . ."

Dr. Stewart developed a Cl. perfringens toxoid which was found when injected into guinea pigs to produce an immunity against many times the minimum lethal dose of a culture of these bacteria.

Drs. Reed and Orr explain that in their investigation of the efficacy of sulfanilamide or its derivatives in relationship to gas gangrene, "the primary objective in undertaking this work was not to find a cure for gas gangrene but to devise a simple method of retarding the development of this infection until such time as a wounded man could be subjected to the well recognized surgical or medical procedures.

"The results appear to demonstrate that sulfanilamide and its derivatives, especially sulfathiazole, introduced early into infected wounds have a marked retarding effect. . . ."

CAUSES OF REJECTIONS OF SELECTEES AT ARMY INDUCTION STATION

Individual variations in the interpretation of regulations prescribed by the War Department for Army physical examinations are believed to be responsible for some of the rejections of selectees at Army induction stations after they have been passed by local draft boards, Milton S. Saslaw, M. D., Captain, Medical Corps, United States Army, and Carl S. Junkermann, M. D., Major, Medical Corps, United States Army, Camp Shelby, Miss., point out in the current issue of *War Medicine*, published by the American Medical Association in cooperation with the National Research Council.

They say, however, that "at the present time, revision of the regulations . . . is in progress, and it is hoped that the new regulations will clearly set forth exact requirements."

Their report is based on a study of statistics regarding rejections at the induction station at Camp Shelby for April, May and June 1941, compared with those for December 1940 through March 1941.

In a previous report Captain Saslaw had presented the most common causes for rejection "with an idea of helping prevent other local draft board physicians from making the same errors. Several methods were outlined as possible means to obviate the high rejection rate, one of which, the

lecture-demonstration tour through key cities, was tried in the state of Mississippi."

During the first period the three largest causes of rejection were flat feet (39.8 per cent), general body defects (8.6 per cent) and hemorrhoids (4.5 per cent). For the second period of study the percentages were as follows: flat feet, 13.8 per cent; general body defects, 10 per cent, and hemorrhoids, 1.5 per cent. In the second period venereal diseases led the entire group, with a rejection rate of 15.3 per cent. Flat feet was second and mental condition was third (11.2 per cent).

The two authors say that "The increase in the venereal disease rate is perhaps partly explained on a seasonal basis, but there is no doubt that greater caution was exercised at the induction station to ferret out cases of such disease. The decrease in the rate of rejection for pes planus (flat feet) is explainable partly by the beneficial effects of the lecture-demonstration tour and partly by a more liberal interpretation of the existing regulations. The high rate of incidence of mental conditions is not real. It is explainable on the basis of inclusion in this group of selectees unable to pass a literacy test begun May 15. Illiterate selectees were included in this group (and in fact, constituted by far the largest part) because in the previous statistics a certain number of illiterates had been included. . . .

"The monthly rejection rate dropped from 30.4 per cent in February and 33.7 per cent in March to 22.8 per cent in April, 20.8 per cent in May and 22.5 per cent in June. One is tempted to assume from these figures that the lecture-demonstration tour made through the state of Mississippi was successful in decreasing the number of rejections. Actually, however, this is not the entire truth. During this period a change in personnel, along with a change in attitude toward greater liberalism in interpretations of regulations, occurred, and this greater liberalism was just as effective as was the lecture-tour demonstration."

EPIDEMIC CEREBROSPINAL FEVER OUTBREAKS MAY FACE COUNTRY

TWO PHYSICIANS SAY, HOWEVER, THAT OUTLOOK FOR THE CONTROL OF MENINGITIS HAS BEEN GREATLY IMPROVED BY SULFANILAMIDE

The possibility that this country may be confronted in the near future with outbreaks

of meningococcic meningitis (inflammation of the membranes of the brain and spinal cord due to the bacteria meningococci), also known as epidemic cerebrospinal fever, is pointed out by John H. Dingle, M. D., and Maxwell Finland, M. D., Boston, in the current issue of War Medicine, published by the American Medical Association, Chicago, in cooperation with the Division of Medical Sciences of the National Research Council, Washington, D. C.

In their article, which reviews the present status of the treatment of this and various other kinds of acute bacterial meningitis, the two authors say that recent medical developments have very materially improved the outlook for meningitis.

"Acute purulent meningitis," they say, "is always considered to be an extremely serious condition. With the exception of the form caused by the meningococcus, that is, the variety usually known as epidemic cerebrospinal fever, meningitis has until recently been almost invariably fatal. Even in cases of meningococcic meningitis the mortality rates have always been high. It is not surprising, therefore, that in the past a large variety of therapeutic (treatment) measures, often laborious and heroic, have been used in cases of this disease. The advent of sulfanilamide and its derivatives has simplified the treatment and improved the outlook considerably. . . .

"Since epidemics of meningococcic meningitis occurred during the last world war, are prevalent in some countries today and may assume large proportions in the armed forces or civilian population of this country in the near future, the various aspects of this disease will be considered in some detail.

"An outstanding feature of the disease has been its occurrence during wartimes in epidemics involving both military and civilian populations. During World War I there were 5,839 cases of meningococcic meningitis in the United States Army, with 2,279 deaths, a case mortality rate of 39 per cent. Although the attack rate and the military non-effectiveness rate have usually been low, the sudden way in which the disease strikes, its mysterious manner of spread and its high mortality may have a serious effect on the morale of civilian and military personnel. These features all point to the possibility that this country may be confronted with outbreaks of this disease."

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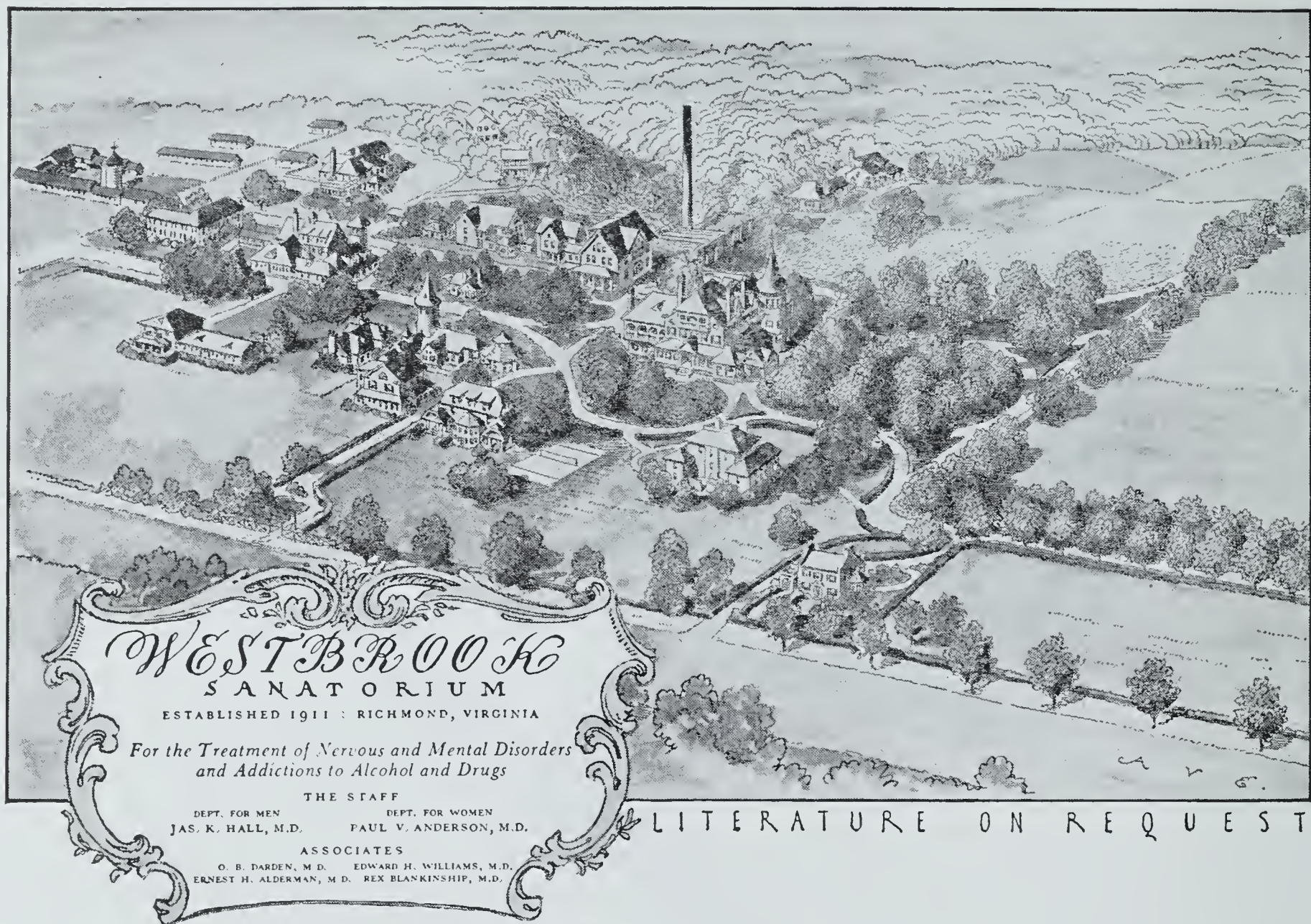
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Miscellany

PHYSICIANS SAY MALNUTRITION IS WIDESPREAD IN THIS COUNTRY

NUTRITIONAL STATUS OF AN APPRECIABLE PART OF POPULATION CAN BE VERY MUCH IMPROVED, NATIONAL RESEARCH COUNCIL BODY FINDS

"The evidence at our disposal warrants the conclusion that dietary inadequacies and malnutrition of varying degrees are of frequent occurrence in the United States and

that the nutritional status of an appreciable part of the population can be distinctly improved," Norman Jolliffe, M. D., New York; James S. McLester, M. D., Birmingham, Ala., and H. C. Sherman, Ph. D., Sc. D., New York, declare in summarizing a paper on "The Prevalence of Malnutrition," published in The Journal of the American Medical Association for March 21. "If optimal nutrition is sought, not mere adequacy, widespread improvement is possible," they add.

In the introduction to their paper they explain that "Recent estimates of the prevalence of malnutrition in the United States have varied so greatly that the Food and Nutrition Board of the National Research Council has assigned to us, as a subcommittee, the task of evaluating existing evidence on this question. Among the reasons for the widely varying estimates is the lack of criteria for the diagnosis of malnutrition. It is therefore necessary before discussion of the evidence that terms be defined.

" 'Nutritional failure' exists as soon as adequate amounts of an essential nutritional factor or factors fail to reach the 'milieu interne' [desired state].

" 'Dietary inadequacy' means the failure to ingest an essential nutritional factor or factors in amounts sufficient to meet the existing requirement of the body.

" 'Nutritional inadequacy' means not only the failure to ingest, i. e., dietary inadequacy, but failure to absorb, to retain and to utilize an essential nutritional factor or factors in amounts sufficient to meet the existing requirements of the body.

" 'Malnutrition' is a bodily condition, detectable by any method of examination, caused by a nutritional inadequacy.

In their summary they say that "Malnutrition is accompanied by manifold signs and symptoms, diverse in nature, and to the casual observer their origin and significance is not always apparent. Some types of malnutrition are strikingly obvious to every one, some are apparent only to the physician who looks for them and some are vague and elusive even to the careful observer using the most accurate specialized technics. If the first group alone is counted the prevalence of malnutrition will be recorded as low, almost negligible. If the second group is counted it will be recorded as high. If the third group is included then the rate will be sufficiently high to occasion genuine concern."

Annual meeting of the Alabama Association of Medical Technicians will be held at the University of Alabama Medical School, Tuscaloosa, May 1 and 2

JOURNAL POINTS OUT THE IMPORTANCE OF SANITATION OF EATING UTENSILS

Managers of public eating and drinking establishments should have their attention called to the glaring opportunities for the dissemination of infection due to inadequate methods of dish washing, The Journal of the American Medical Association for March 21 declares in an editorial. The Journal says:

"An immense increase in travel by rail, ship, plane and motor car and the urbanization of the population have induced millions of people to eat often away from home. The sanitary control of public eating and drinking establishments is an important public health problem.

"In fifty-five eating places in Providence, R. I., the methods of dish washing and the presence on eating utensils of various organisms were investigated. Controlled laboratory experiments were used to determine the requirements for chemical sterilization of glasses with chlorine compounds. An effort was made to educate the managers and employees in the essentials of sanitation and personal hygiene. The investigators visited each establishment twice. They frequently found unclean walls, ceilings and floors, flies in excessive numbers and toilets in poor repair.

"The most important single cause of insanitary practices was the abysmal ignorance of managers and employees of accepted sanitary requirements and procedures. The so-called health card required of all employees in these public eating places had degenerated into a mere formality and was without practical significance. The period of exposing eating utensils to hot water or chemical disinfectants was extremely variable and in most instances far too short to insure effective disinfection. The total bacteriologic count was considered a satisfactory index of the sanitary efficiency of methods employed in washing eating utensils. . . .

"The use of chlorine compounds for the disinfection of beverage glasses can be an effective method providing relatively sterile glasses. However, most of the establishments using chlorine disinfection were guilty of gross misuse of this procedure. A concentration of fifty parts per million of available chlorine acting for fifteen seconds was sufficient to cause a reduction of 99.9 per cent in bacterial counts of the glasses.

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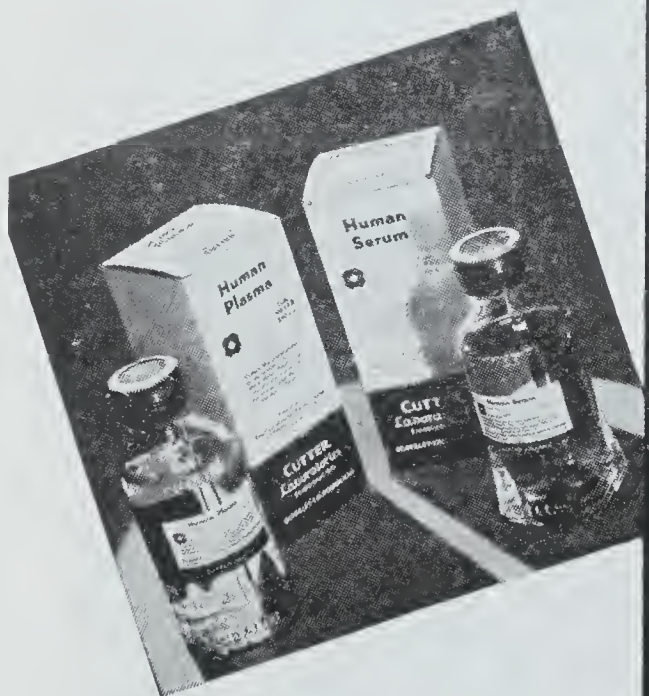
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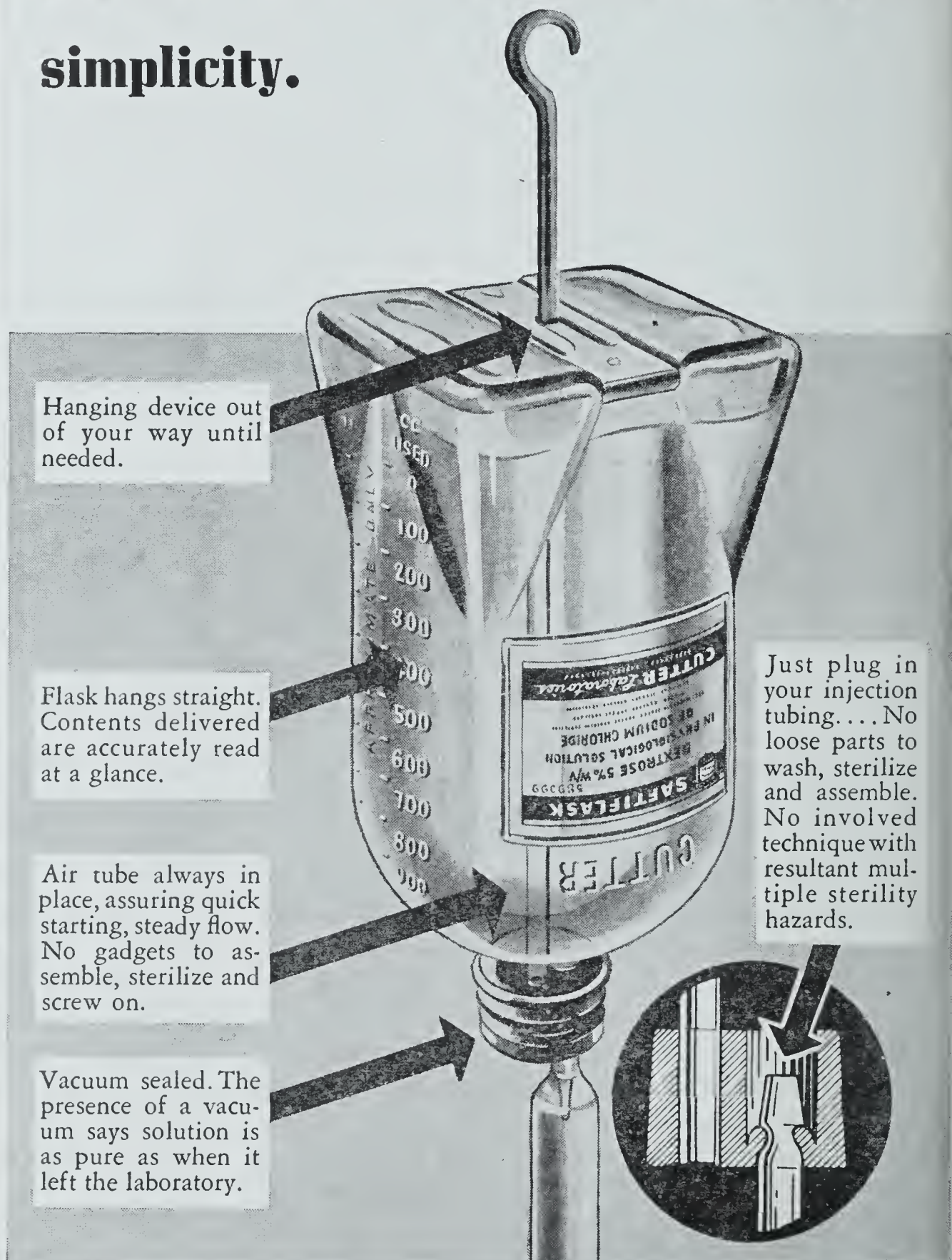


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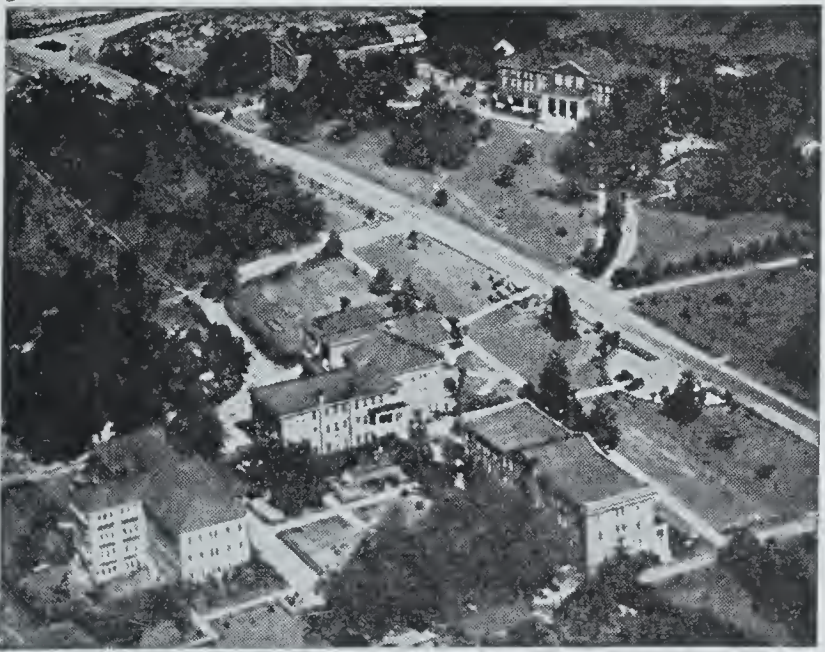
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Dr. M. J. L. Hoye, Supt.

Fellow of the American Psychiatric Association

Miscellany

POINTS TO BRIGHTENING OUTLOOK FOR SUFFERERS FROM ALLERGY

WHILE AS YET THERE IS NO PERMANENT CURE, MUCH HAS BEEN LEARNED RECENTLY ABOUT PROVIDING RELIEF, PHYSICIAN EXPLAINS

While as yet there is no permanent cure for allergic conditions, recent experiments and clinical observations have done much to alleviate the suffering of many who are susceptible, Bret Ratner, M. D., New York, declares in the May issue of Hygeia, The Health Magazine.

Discussing the symptoms of allergy, Dr. Ratner says that "People who have allergy manifest their symptoms in one or more of several ways. They may have hay fever, which produces symptoms referable to the nose and eyes. They may have asthma, which presents symptoms of suffocation due to a spasm of the muscles surrounding the air tubes or small bronchi. They may have eczema, a chronic skin condition which presents a great variety of lesions, or urticaria, more commonly known as hives. A variety of gastrointestinal (stomach and intestines)

disturbances may result from hypersensitiveness. . . . Even migraine and temporary paralysis and blindness have been attributed to this malady.

"It may seem strange that such a wide variety of conditions should be included under the one disease entity, allergy. The explanation is rather simple, perhaps too simple to be complete, but our knowledge has not progressed beyond this point. The tissues which appear to become sensitized are the smooth muscle cells which make up the involuntary muscle found in the lung tubes, in the blood vessels of the skin, in the mucous membranes of the nose and eyes and in the intestinal tract. The symptoms a patient presents, therefore, will depend on the smooth muscle or tissue sensitized. . . ."

It cannot be definitely stated, Dr. Ratner explains, whether all or only certain persons are subject to sensitization. "Certain investigators," he says, "believe that heredity plays a major role. It is granted that human beings possess certain constitutional characteristics which may play a role in the ease with which allergy is acquired, but so far, these characteristics are not known. Children without any family history may develop allergy, and parents suffering from allergy may produce normal offspring. . . . It has been granted that while a particular allergic manifestation is not heritable, the capacity to become sensitized is. The child of an asthmatic parent does not necessarily have asthma, but he may have hay fever or eczema.

"The belief has been expressed that allergy is acquired in much the same way as infectious diseases. There may be certain constitutional factors which make one person more susceptible than another. There are, moreover, conditions which render tissues more susceptible to the invasion of and sensitization to foreign proteins. It is known that membranes are highly permeable in early infancy; this is a period when the organism is being introduced to all new foods and other environmental substances. Another period of danger is during convalescence from disease. . . ."

The treatment is at times as dramatic as the disease itself, the author observes, and quite often one who is sensitive will be free of all symptoms through the simple expedient of removing the offending substance.

The treatment of food sensitivity consists of a meticulous removal from the diet of all foods which contain the offending substance. Once the offending food is discovered and eliminated from the diet, a tolerance can be built up by giving the food involved in small amounts, which are gradually increased.

"A remarkable physiochemical fact," he says, "is that food which is harmful in a raw state may be tolerated when it is thoroughly cooked. Thus a person sensitive to egg may react to a coddled egg as well as to a raw one, yet he may be able to eat a hard boiled egg. The sensitive milk patient can tolerate milk boiled for half an hour, or evaporated milk, and the person who is allergic to wheat, meat or vegetables in like manner can tolerate these foods when thoroughly cooked. Doctors are endeavoring to establish an immunity, or tolerance, to pollens by inoculating hay fever patients at regular intervals throughout the year."

FINDS THAT DIABETIC PATIENTS ARE NOT PREDISPOSED TO BOILS AND CARBUNCLES

The prevailing impression among both physicians and laymen that boils and carbuncles are commonly associated with diabetes and that the diabetic are predisposed or more likely to suffer from these pyogenic (pus producing) skin infections than are the nondiabetic is not supported by clinical investigation, John R. Williams, M. D., Rochester, N. Y., reports in the April 18 issue of *The Journal of the American Medical Association*.

Dr. Williams made a study of 500 diabetic patients admitted to both office and hospital practice with reference to the incidence and occurrence of the pyogenic skin infections diagnosed as boils and carbuncles.

"In only 1 instance," he says, "did the onset of a boil coincide with the discovery of diabetes. In all the other cases, except 1, both boils and carbuncles occurred long after the onset of diabetes and apparently as an independent and unrelated phenomenon. In the 1 case the carbuncle occurred ten years before the onset of the diabetes.

"Although the numbers of cases in this study are small, they support the opinion and conclusions of other workers who have examined the question."

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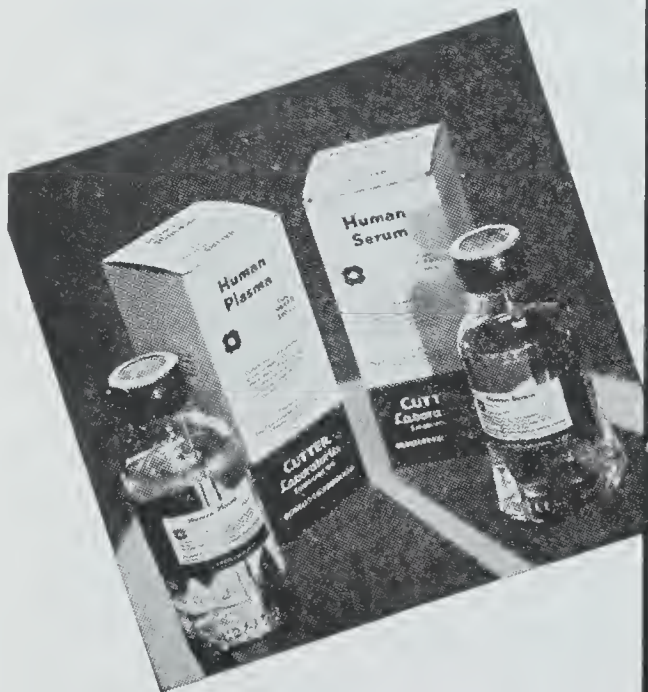
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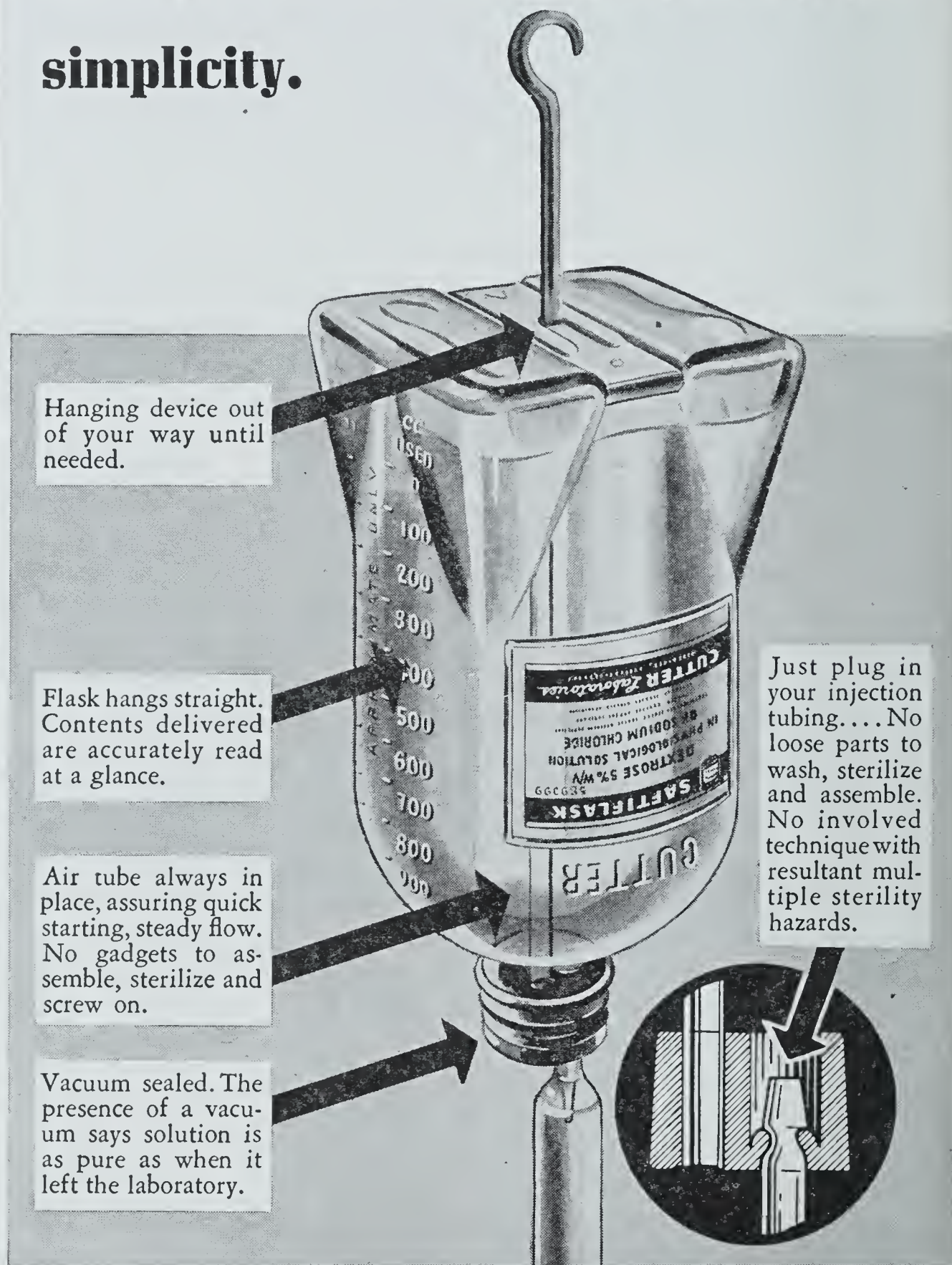


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WARNING ON "ATHLETE'S FOOT" TREATMENT

Until the conclusion of studies to determine the extent of the causticity of a mixture of phenol and camphor, recently hailed as "A Working Cure for Athlete's Foot," and its possible benefits and dangers, "treatment of 'athlete's foot,' ringworm and other fungous infections (with this mixture) or any other potent remedies is best intrusted to the qualified physician," The Journal of the

American Medical Association warns in its May 9 issue. It has been warned that the mixture should not be applied to a wet skin since water has been reported to make it caustic.

Pointing out that most cases of fungous infection require persistent skillful attention if the disease is to be brought under complete control, The Journal says that "Recommendation that untrained people use on themselves an agent which has the potential danger of causticity is highly doubtful."

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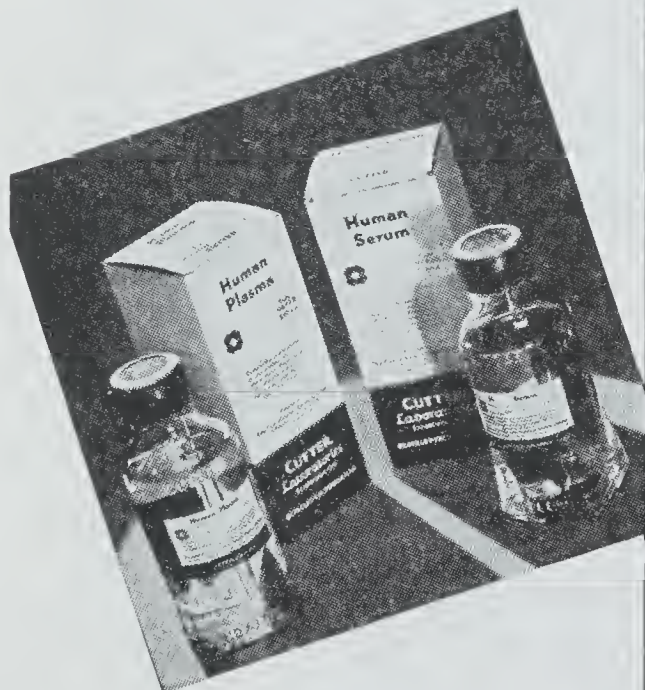
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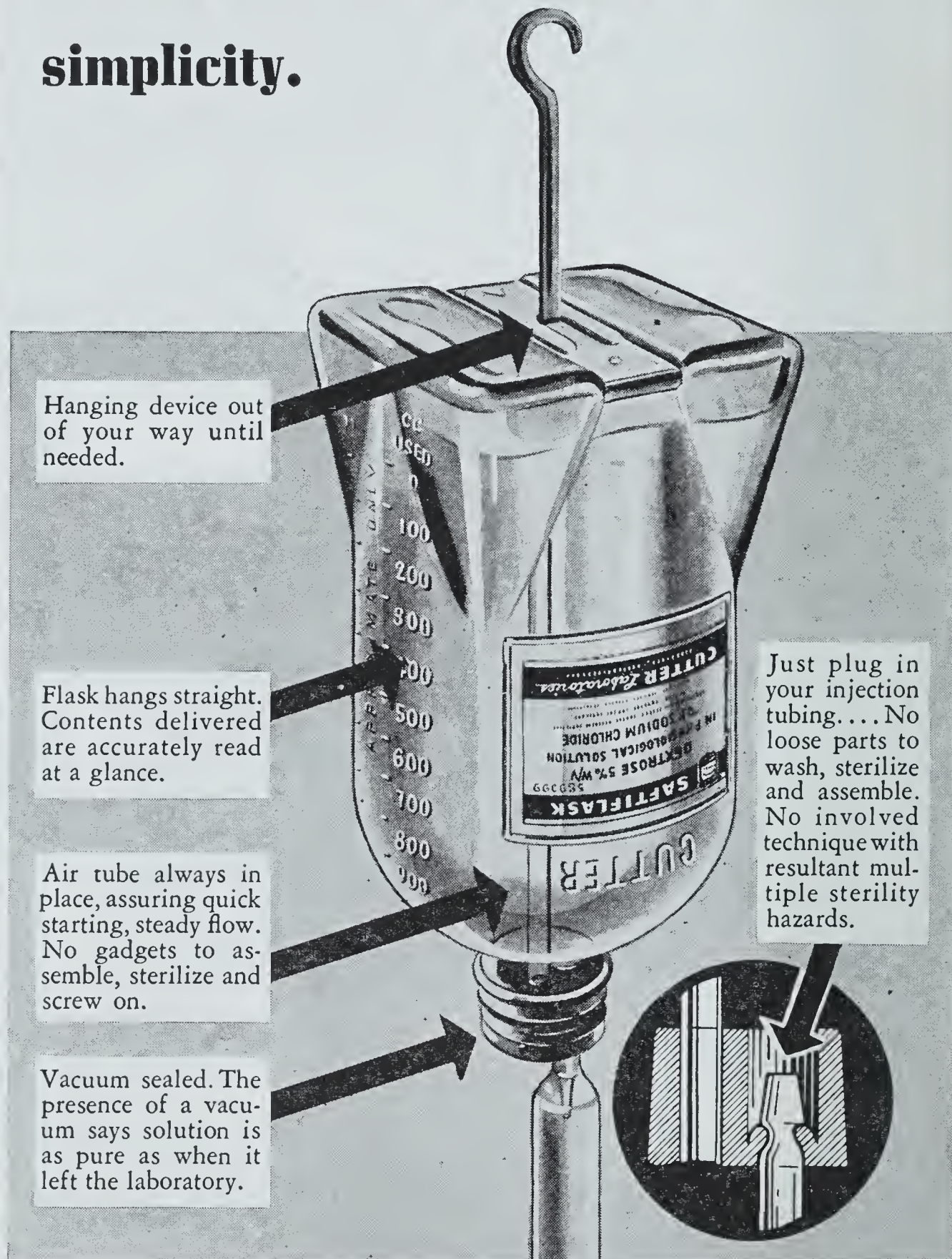


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